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THE
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REVIEW

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Engineering

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Vol. XII., No. 11. *

SHANGHAI — MANILA



April, 1916.

New Russian Railway in Manchuria

Chinese Book-keeping

Building the Chefoo Breakwater

China Reverts to Republicanism

Japan and China's Indebtedness

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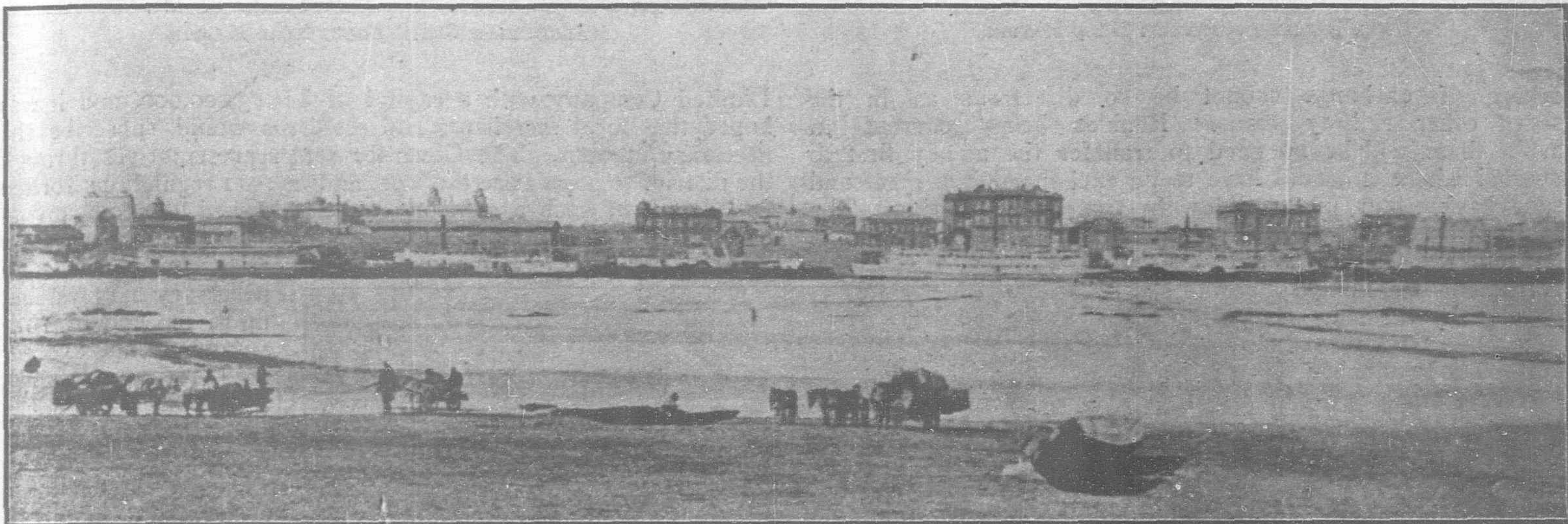
THE FAR EASTERN REVIEW

COMMERCE :: ENGINEERING :: FINANCE

VOL. XII.

SHANGHAI, APRIL, 1916

No. 11



BLAGOVESHCHENSK ON THE AMUR SEEN FROM PROPOSED NORTHERN TERMINAL OF NEW RUSSIAN RAILWAY

NEW RAILWAYS IN NORTH MANCHURIA

Russia Consolidates Her Position

An important agreement was signed in Peking on March 27 last between the Russo-Asiatic Bank, represented by Mr. L. de Hoyer, and the Chinese Government, represented by Mr. Liang Tung-yen, the Minister of Communications, and Mr. Chou Hsu-shih, Minister of Finance, for the construction of a railway connecting the cities of Harbin, Mergen, Aigun, and Tsitsihar, in Northern Manchuria.

As is well known Harbin is an important city at the junction of the Siberian Railway and the line running south to Changchun and thence to Dalny, while Tsitsihar is connected with the Siberian Railway by a light line which will be taken over under the agreement just signed. Mergen is a little more than half way between Tsitsihar and Aigun, which is on the Amur River. North of Aigun, on the opposite side of the Amur, is the city of Blagoveshchensk, which the new railway is destined to serve. Connection will be made by means of ferry boats with what is now the village of Heiheifu, opposite Blagoveshchensk, where the railway will terminate.

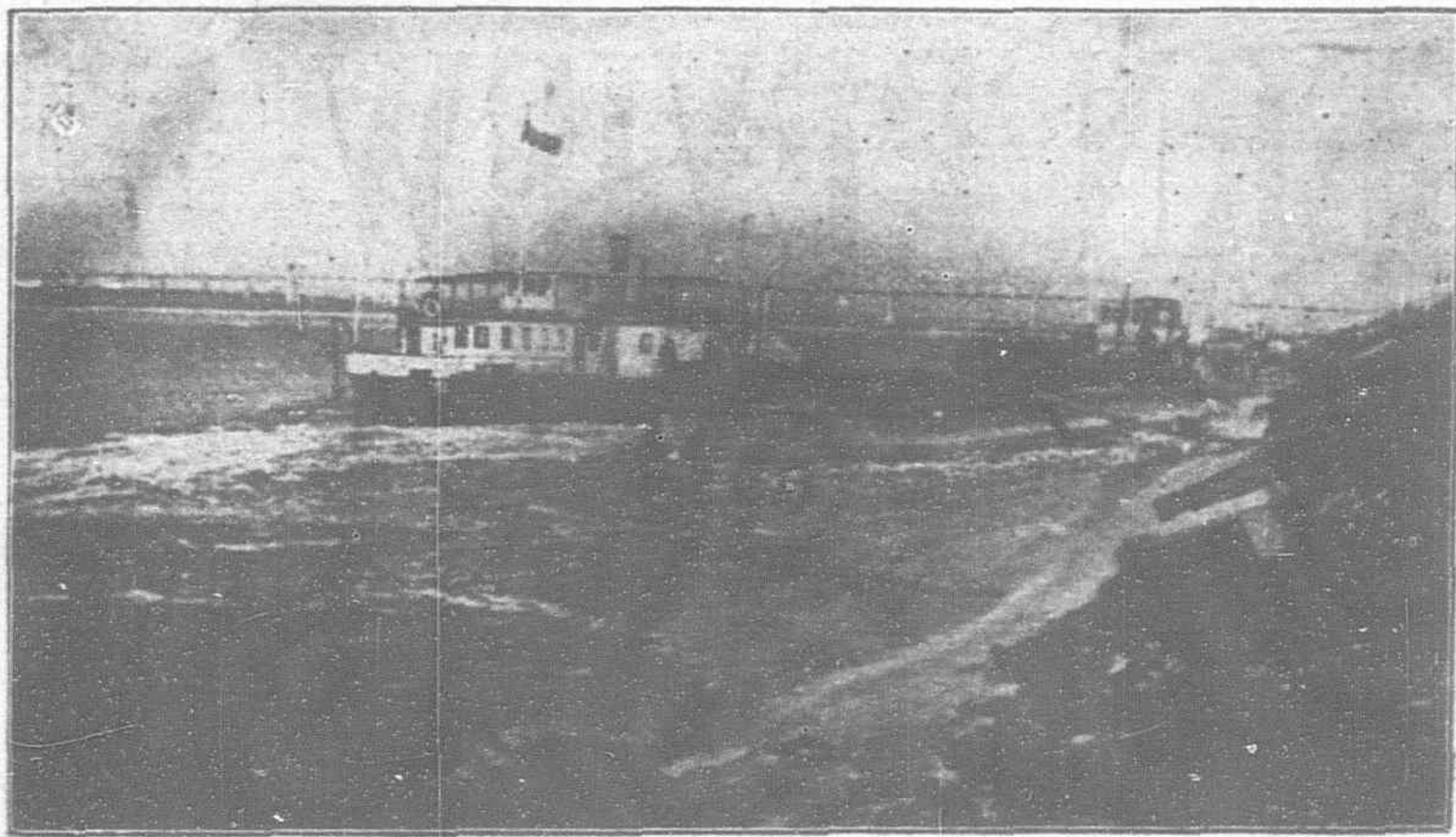
The total length of the proposed railway is approximately

1,000 kilometres. It will link up the Siberian railway with the Amur River, and will consolidate Russian interests, and incidentally develop great areas of valuable territory, in North Manchuria. An interesting point is that it will cover the northern section of what is known as the Chinchow-Aigun project, the agreement for which is held by the American Group of Bankers, but which was rendered void by the energetic protests of Japan that the proposed line would parallel the South Manchuria Railway.

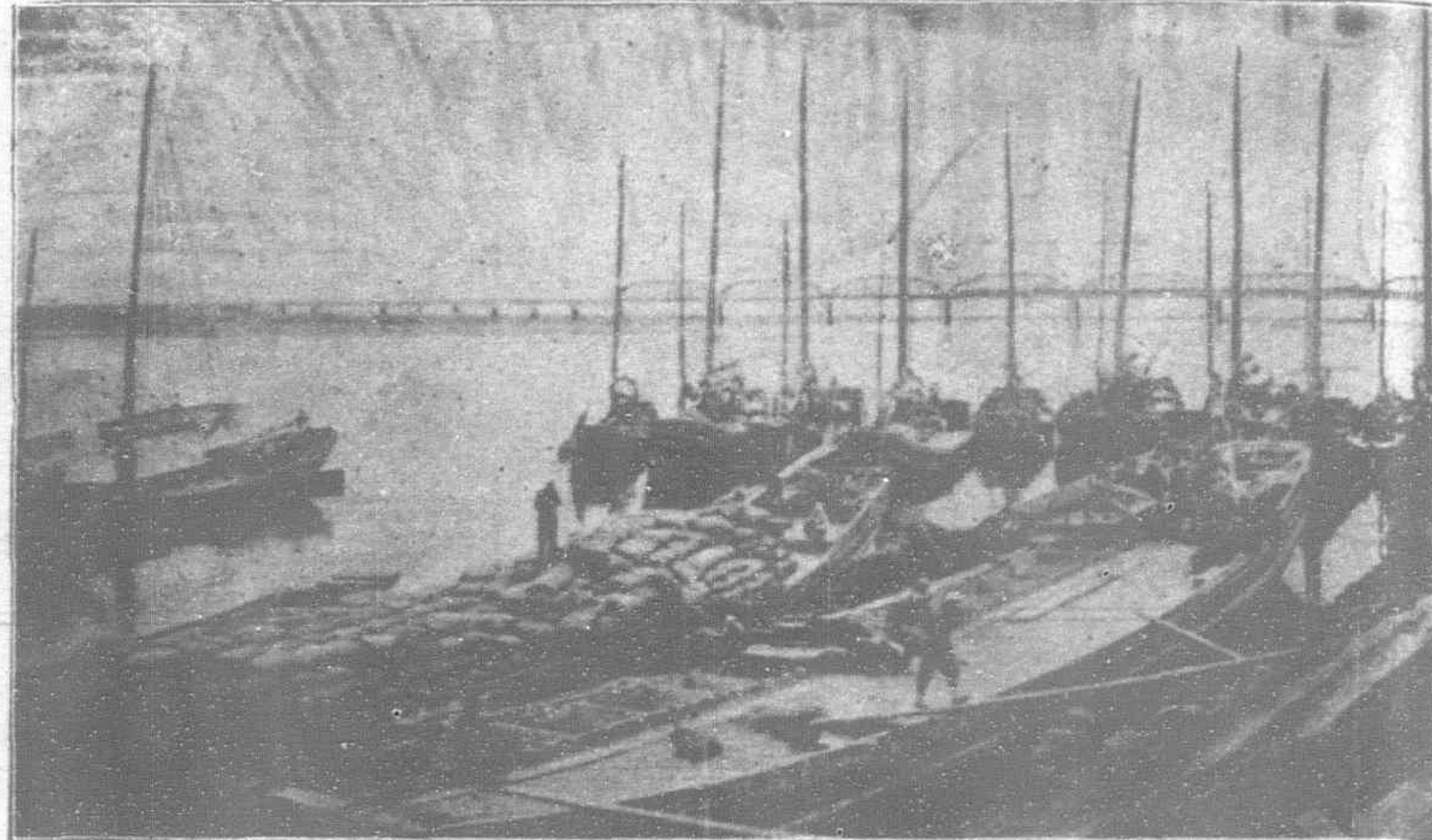


RUSSIAN FARM IN NORTH MANCHURIA

The agreement is for a loan of fifty million Roubles, and any additional amount which might be required to complete the project, the loan to be floated when financial conditions may permit after the war, and in whatever markets the Russo-Asiatic Bank may deem money to be available. The agreement is regarded as an improvement on other railway agreements in China where the interests of the financiers are concerned with control of expenditure, etc., while the Chinese Government gains a distinct pecuniary advantage owing to an arrangement being made whereby the



RIVER BARGES IN SUNGARI NEAR HARBIN



MANCHURIAN GRAIN BOATS NEAR HARBIN

working of exchange cannot be so disastrous as in the case of other railway loans. Roubles being current in Harbin there will be no need to transfer the money first to Shanghai where it would have to be exchanged into sycee and thence back again into roubles on transfer to Harbin. The whole of the capital as required will be sent direct from Russia to Harbin, the Chinese Government gaining advantage by the simplicity of the procedure. The bondholders receive ample protection in the usual way by having the line, etc., as security, by the employment of qualified Engineers and Accountants, etc., and in addition by the arrangement that the earnings of the railway shall be deposited in branches of the Russo-Asiatic Bank.

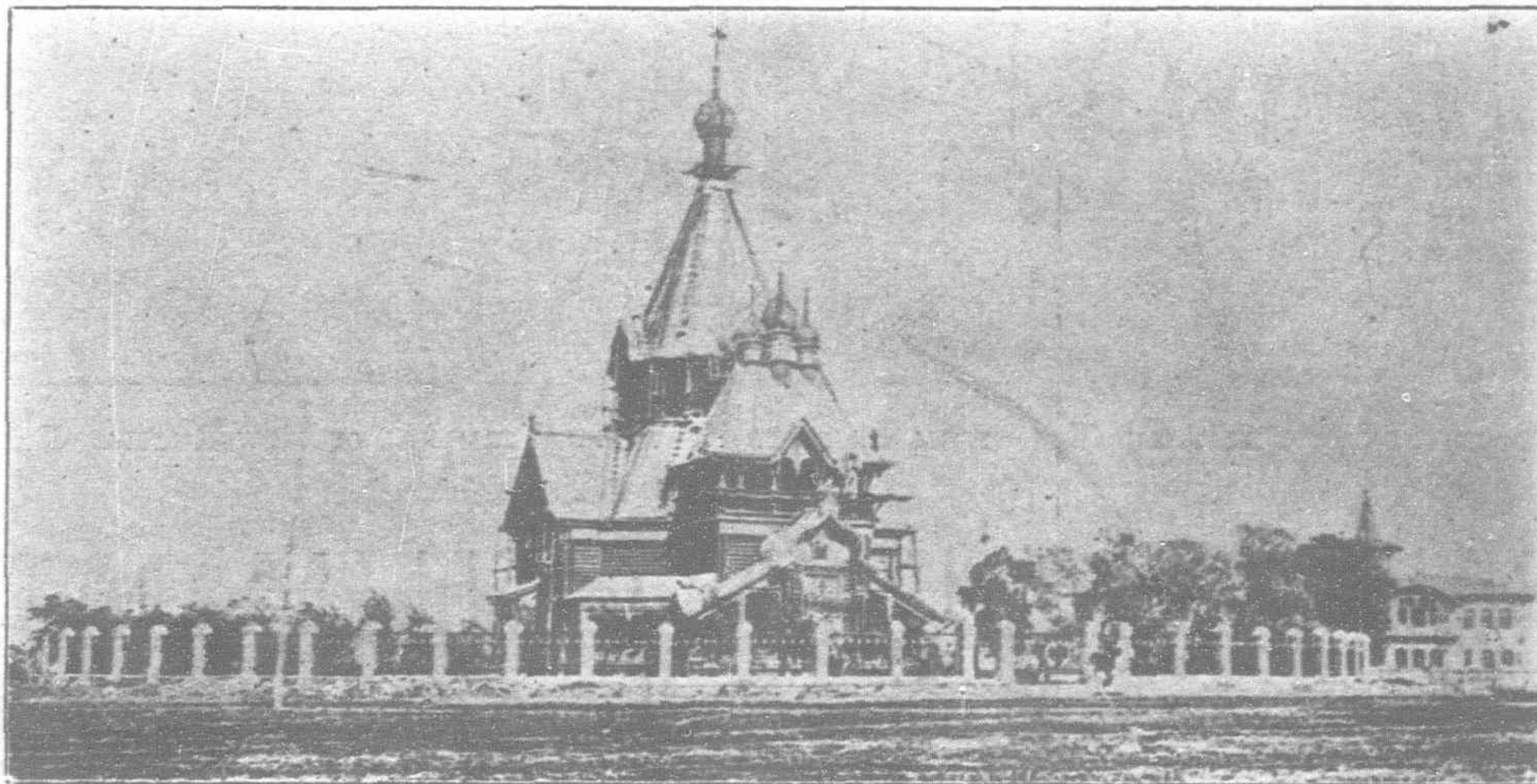
The idea of building a railway from Harbin to Aigun has long been entertained by the Chinese authorities in the Province of Heilungchiang (or Tsitsihar) as well as by the commercial people in Aigun, Mergen, Harbin and other centres in Northern Manchuria. In April, 1910, the Provincial Assembly of Heilungchiang drafted a scheme, which was approved by the Governor of Tsitsihar, for the building of a line from Harbin to Heilunfu (or Tunkan, as it is called in Russian) which lies some 210 kilometres northwest of Harbin. It was intended to form a

Limited Company with a capital of Tls. 3,000,000, and it was hoped that local merchants and residents would subscribe the necessary amount. The Governor sent representatives through the district to popularise the idea, and in 1911 regulations for the foundation of such a company were published, the company to be called the Lan-Har Railway Company. Engineers were

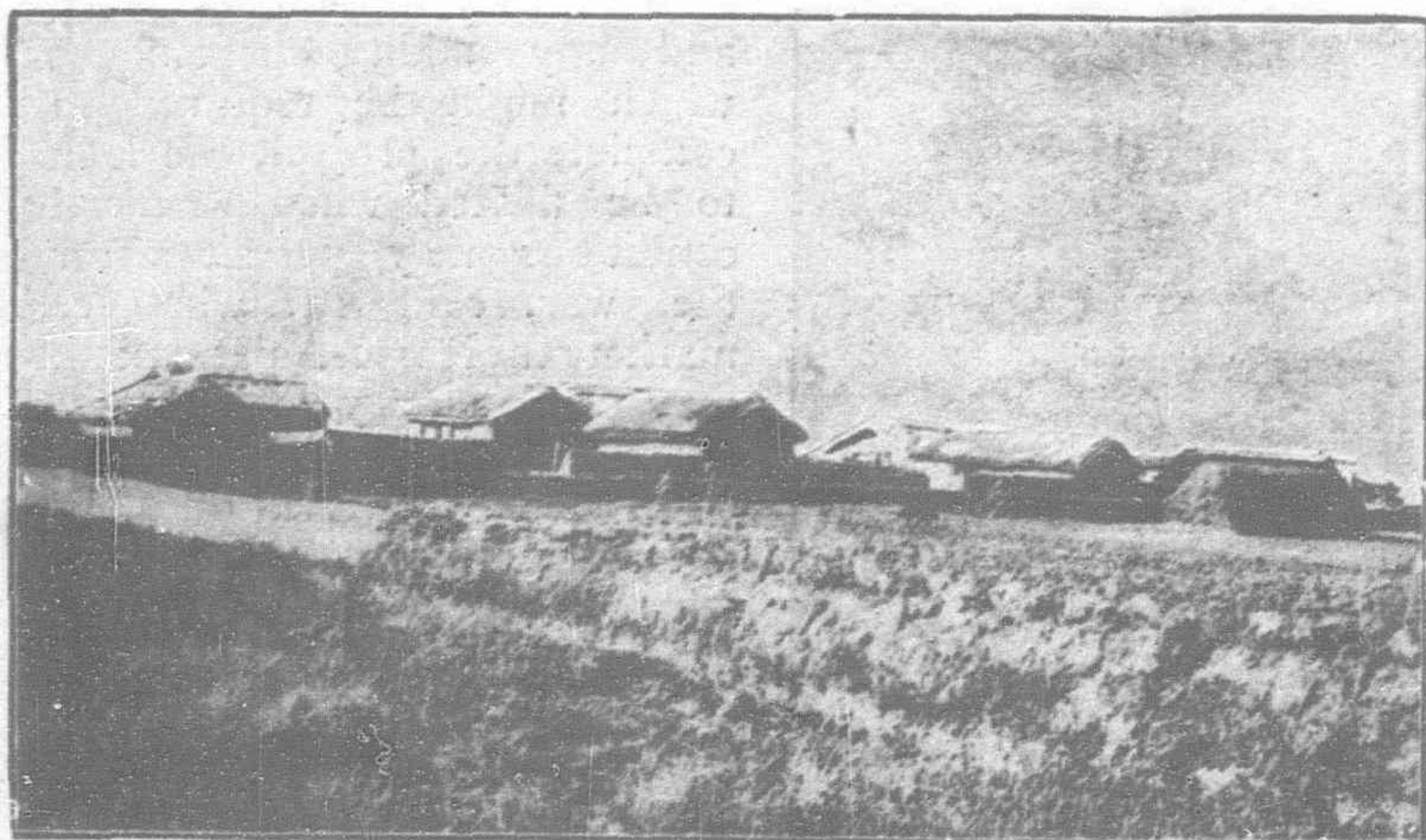
instructed to make the necessary surveys, but up to the end of 1912 an amount not exceeding \$100,000 was all that was raised by private subscription, though the Peking Government was induced to promise a subsidy of Tls. 1,000,000 without interest.

In 1913 the question was again brought before the Provincial Assembly of Tsitsihar, some members being energetic and sanguine in their advocacy of the scheme. In their speeches they particularly emphasised two

points, one that if the Chinese built the railway themselves foreigners would thus be prevented from asking for the right to construct it, and another that the railway would facilitate the movement of troops and thus serve to check the raiding Hunghutzes, or brigands, who were often used as a pretext by foreigners to interfere in China's administration in Northern Manchuria.



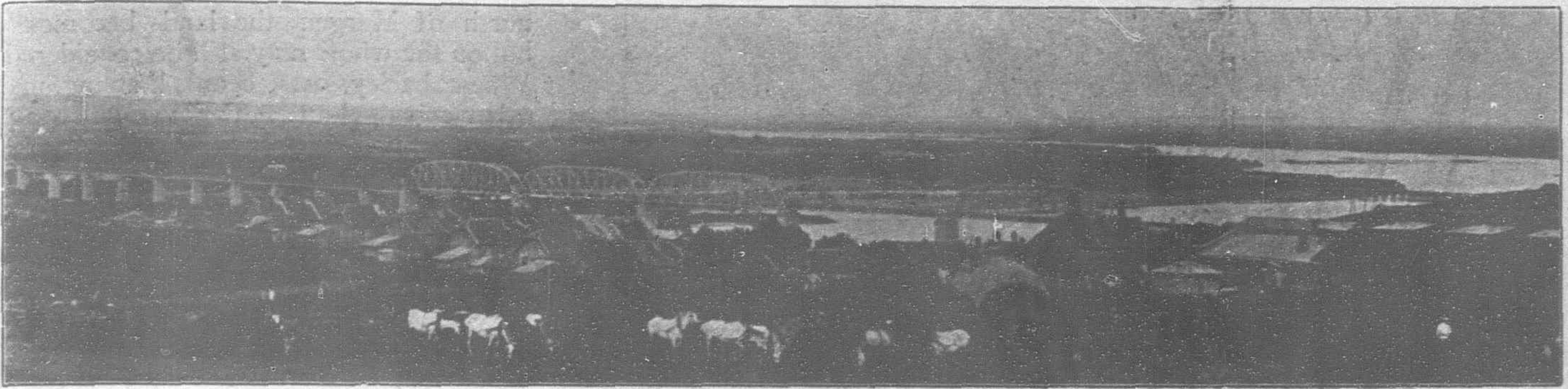
RUSSIAN CHURCH IN HARBIN



MANCHURIAN FARM HOUSE



JEWISH SYNAGOGUE AT HARBIN

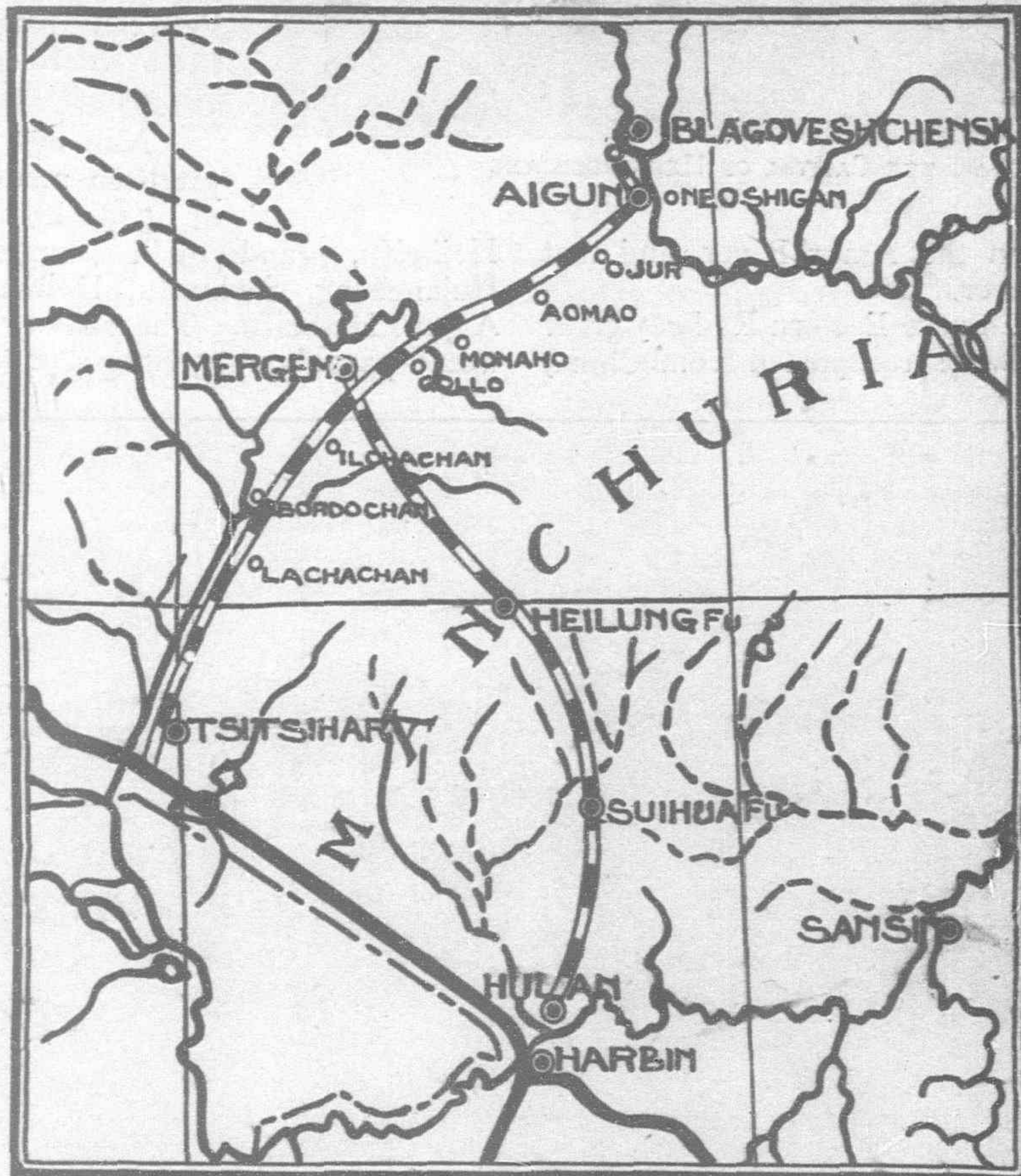


BRIDGE OVER THE SUNGARI AT HARBIN

The project of 1910 contemplated the building of a narrow gauge railway, while the second one had in view a line of standard gauge, as in use in China. As, however, the most sanguine advocates of the scheme had to admit that they could not raise sufficient capital to carry it out in its entirety they suggested to begin by building the line from Harbin to Hulanchen, about 20 kilometres from Harbin, and from there to Hailunpu, about 175 kilometres from Harbin.

This railway was estimated to cost \$7,000,000. It was hoped that with assistance to the extent of Tls. 2,000,000 from the Peking Government the balance could be found locally. The Central Government, however, did not seem to be disposed to advance that sum, probably having some doubt as to the capability of local people finding the balance.

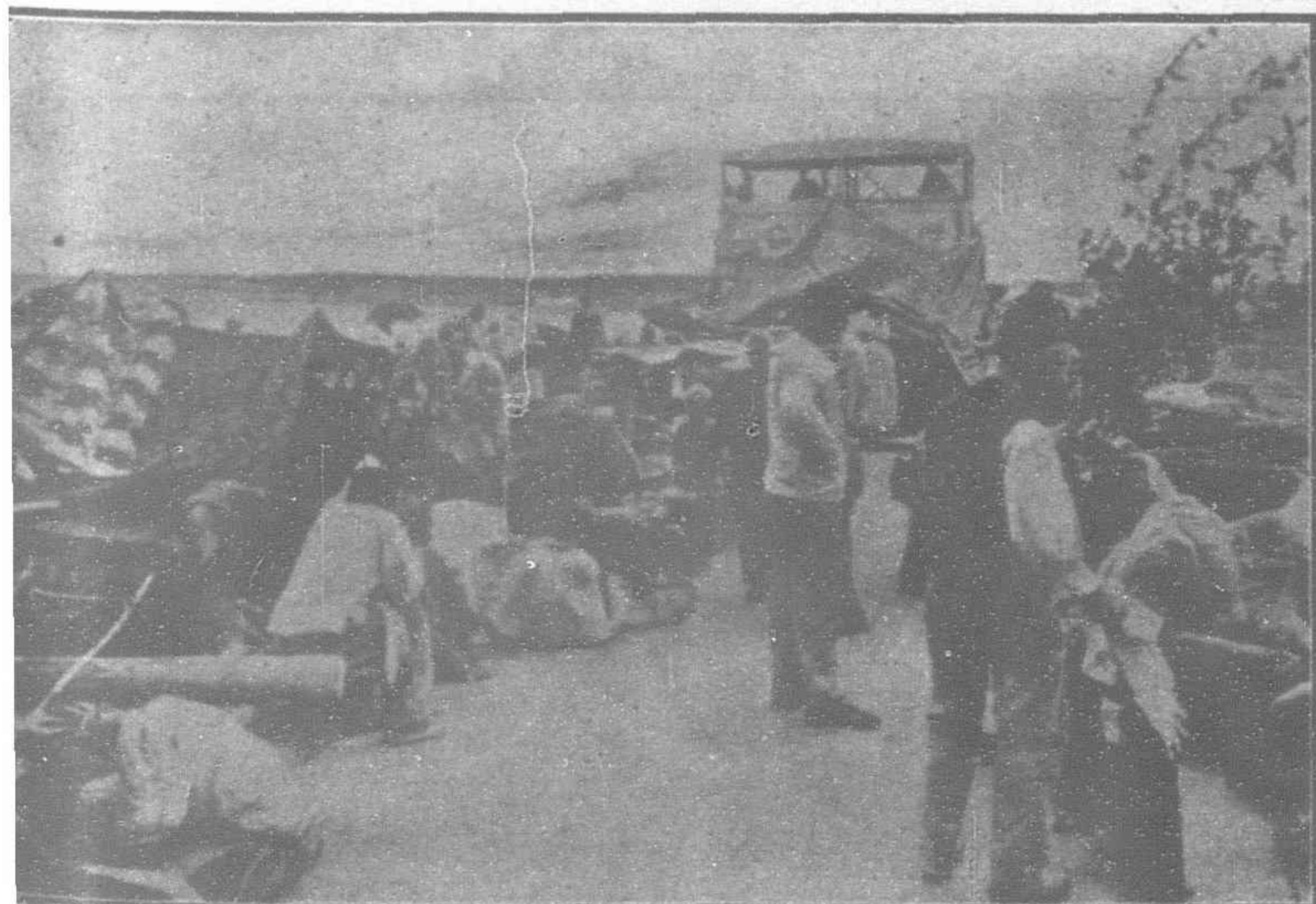
For about two years the scheme showed no signs of development. The Russo-Asiatic Bank then offered to furnish the necessary capital, and the Minister of Communications in Peking entered into negotiations with Mr. L.



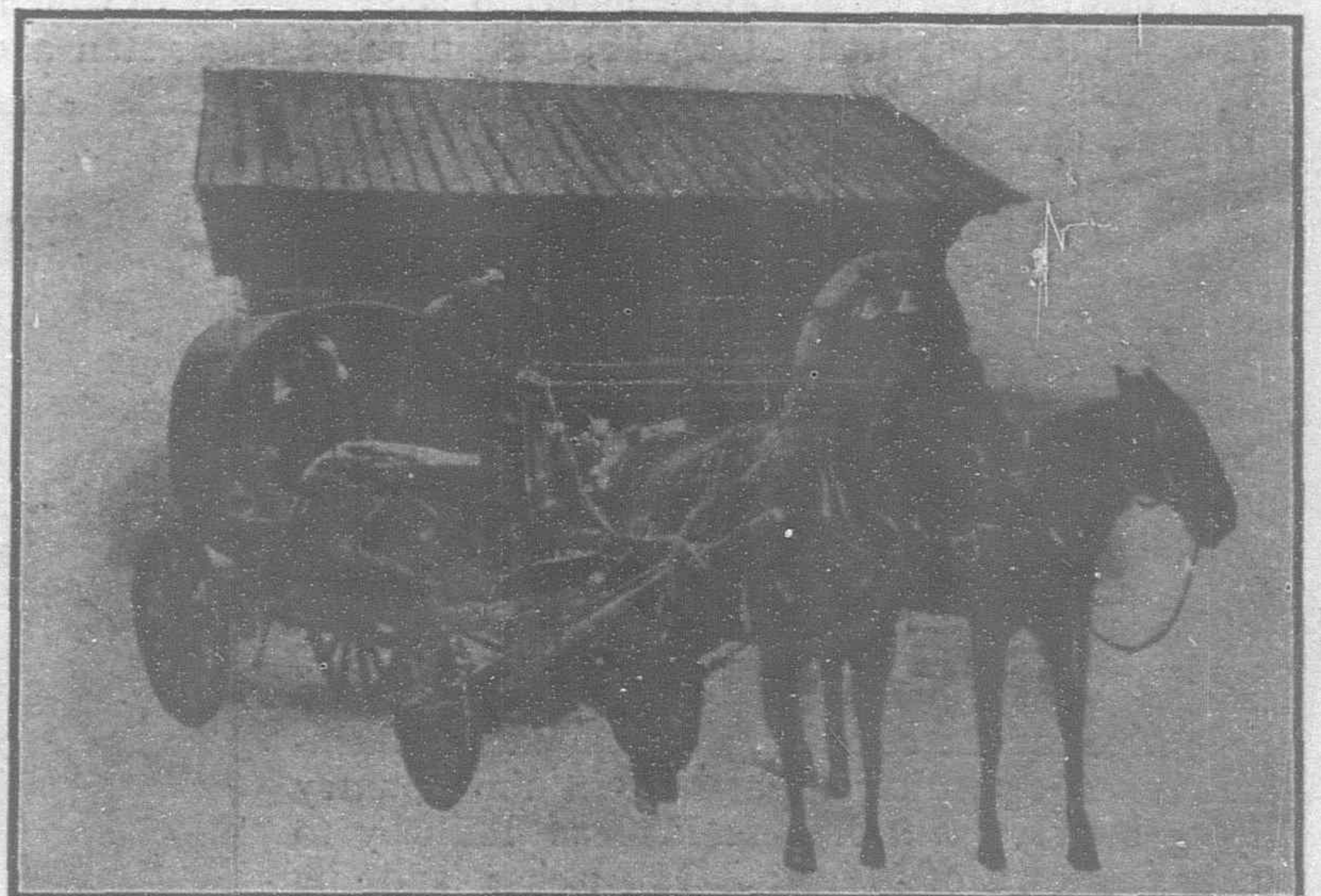
MAP OF NORTHERN MANCHURIA SHOWING THE ROUTE OF TWO NEW LINES FROM TSITSIHAR TO BLAGOVESHCHENSK VIA MERGEN AND FROM HULAN (HARBIN) TO MERGEN—EXISTING LINES SHOWN IN BLACK

DeHoyer, the representative of the Bank in Peking. Negotiations began in August, 1914, and lasted until March 27, 1916, when the agreement was signed.

Apart from its value to Russia as a means of consolidating the interests of that nation in Northern Manchuria, the railway will open up an extensive region of valuable country, and will materially assist the work of colonization set afoot by the construction of the Chinese Eastern Railway. Before the building of that line virtually the whole of North Manchuria was a wild uncultivated country. The very sparsely populated areas about the Sungari River and its affluent the Hulan River were the lands of the Mongolian tribesmen known as the Horlos, while further north came those of the Olots, and still further north towards Mergen those of the Daur. In the smaller Khingan mountains were tribes living on the chase, and only in the extreme north along the Amur River were there a few settlements of Manchu Bannermen. At this time there was only one small town



RUSSIAN COLONISTS ON AMUR RIVER STEAMER



RUSSIAN TRANSPORTATION ON THE TSITSIHAR-MERGEN HIGHWAY



MAIN STREET OF TSITSIHAR, THE CAPITAL OF HEILUNGCHIANG

worth mentioning, except Aigun, on the Amur River, and that was Heilungcheng on the Hulan River.

With the construction of the Chinese Eastern Railway great numbers of workmen and coolies were transported from China, mostly from Shantung Province. They earned comparatively large wages, and settled down in proximity to the railway. Thus were created the first districts in the zone of the Chinese Eastern Railway to the north of Harbin, the districts of Hulanfu, Suihuafu and Hailunfu. The advent of Chinese settlers caused the Mongol tribesmen to be pushed gradually farther and farther westward towards the Barga, and with their withdrawal the rich lands watered by the Sungari and Hulan Rivers were put under cultivation.

Immigration was developing most satisfactorily when the Boxer rising of 1900 put a stop to Chinese progress in this part of the Empire for six or seven years. In the last years of the Manchu regime a sound and serious scheme of emigration was launched by the Peking Government, in accordance with which, as is well known, Inner Mongolia, some parts of Turkestan and Manchuria had to be colonised by Shantung, Hunan, and other Chinese peasants. The Governor of Tsitsihar had to follow regulations issued by Peking, but the greatest facilities were accorded to colonists, enabling settlers to push northward until Heilunfu was reached. The Province of Heilungchiang, (Tsitsihar) was divided into the six districts of Heilungchiang, Suihuafu, Heilengfu, Mergen, Heiheifu and Aigun, roads were built between the district towns and telegraph lines were erected. In 1909 the old system of government under a Tartar General was abolished and a purely Chinese administration was inaugurated.

Most of the colonists naturally busied themselves in agricultural pursuits in the country lying between the Chinese Eastern Railway to near the town of Mergen. The richer lands lie near the Sungari River and its affluents, the Hulan and the Tunkan Rivers. Further to the

north of Mergen the land becomes poorer, but on the whole may still be considered fertile. Wheat, barley, oats, beans, kiaoing, maize and other cereals flourish, the average crop per acre being 1,440 lbs.

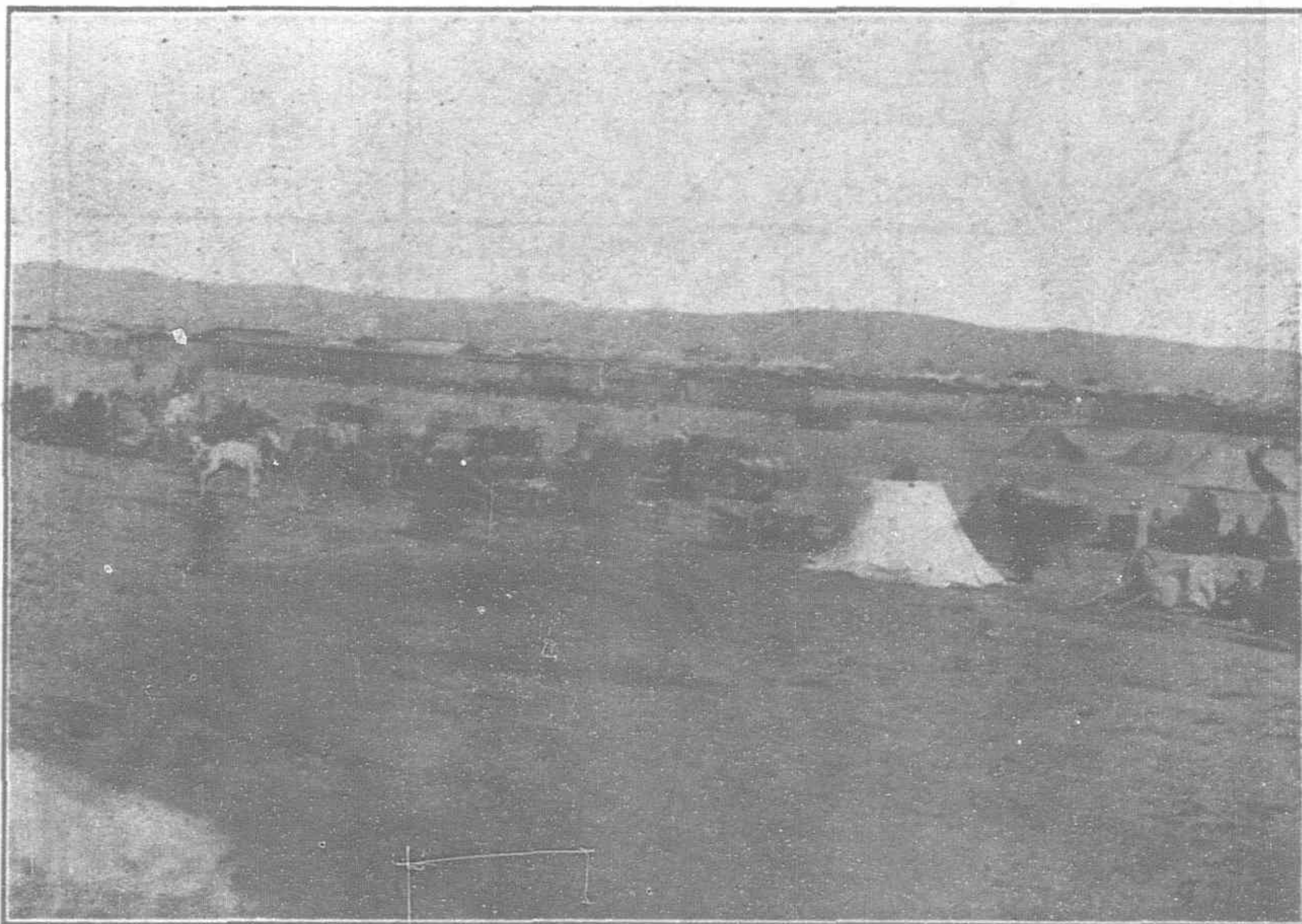
The northern region, which has as its centre the Amur River, is less rich from the point of view of agriculture. The winters are very cold, the summers short and the rainfall heavy. Wheat and oats are, however, grown with some success but the crops are about half that of the southern section. Insofar as other products are concerned there are deposits of graphite north of Suihuafu, and near Mergen on the River Hunhai are coal fields. Between Mergen and the Amur River there are extensive forests, while precious metals exist in the mountains.

Although the location of the line has not yet been made it will probably have a length of 725 kilometers between Harbin and Heiheifu, and will connect the following towns:—Hulancheng, Suihuafu, Heilunfu, Erkeshan, Dadun, Mergen, Aigun, Heiheifu. The railway between Harbin and Heilunfu would pass about 75 villages or settlements, while in the following

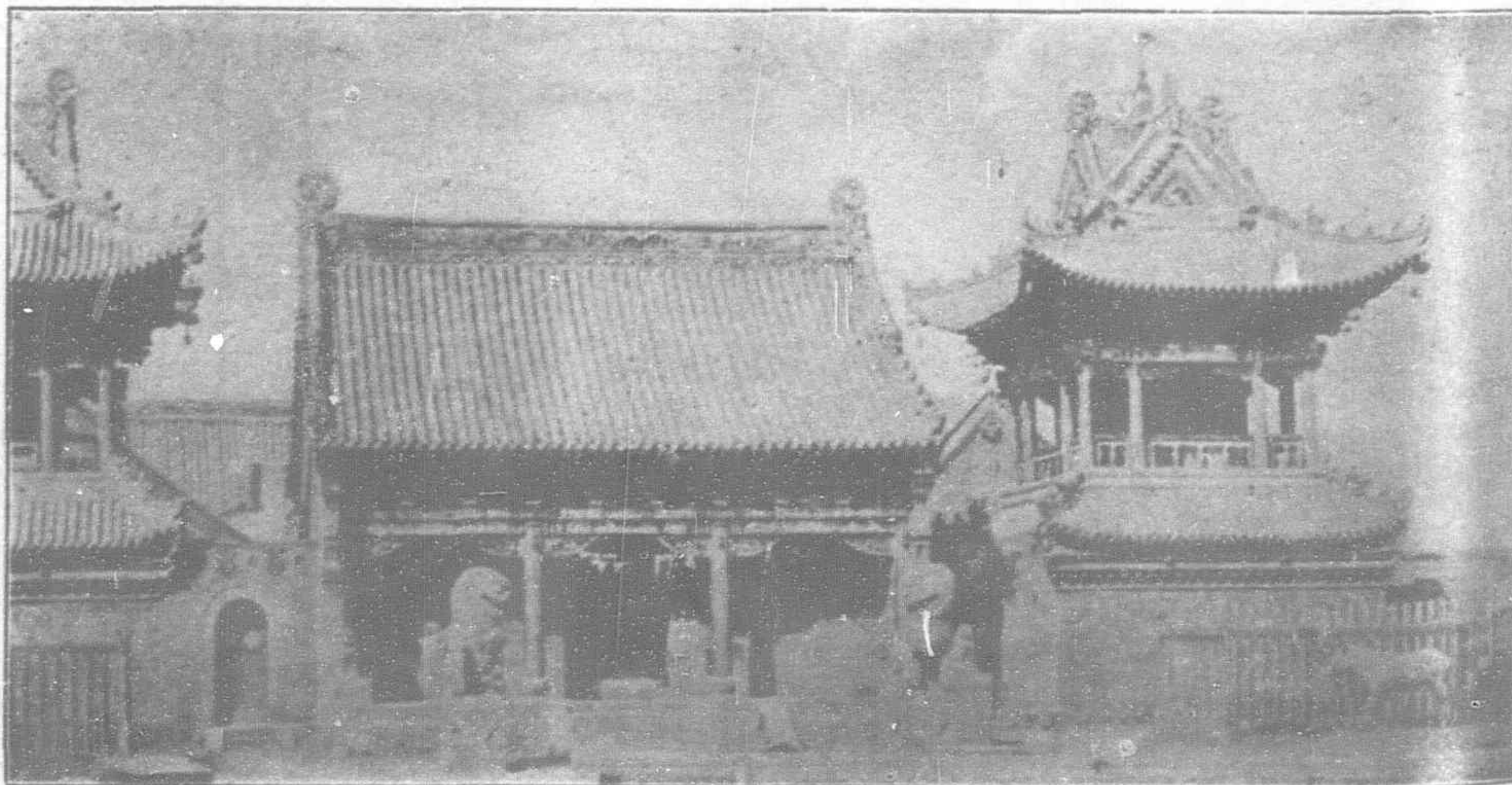
200 kilometers settlements of colonists would be tapped, though they are far from being dense. To the north of Mergen the population becomes scarcer. It was estimated about two years ago that the region through which the railway will pass had a population of about 2,000,000 while 3,000,000 acres were under cultivation. The experience of the Chinese Eastern Railway indicates that with the construction of the new line great numbers of people will settle in the vicinity.

The products of this region have up to the present time been transported to markets in junks and tow-boats down the Hulan and Tunkan Rivers to the Sungari River and Chinese

Eastern Railway. To reach the market from Tsitsihar the products go down the Noni River to the Chinese Eastern Railway.



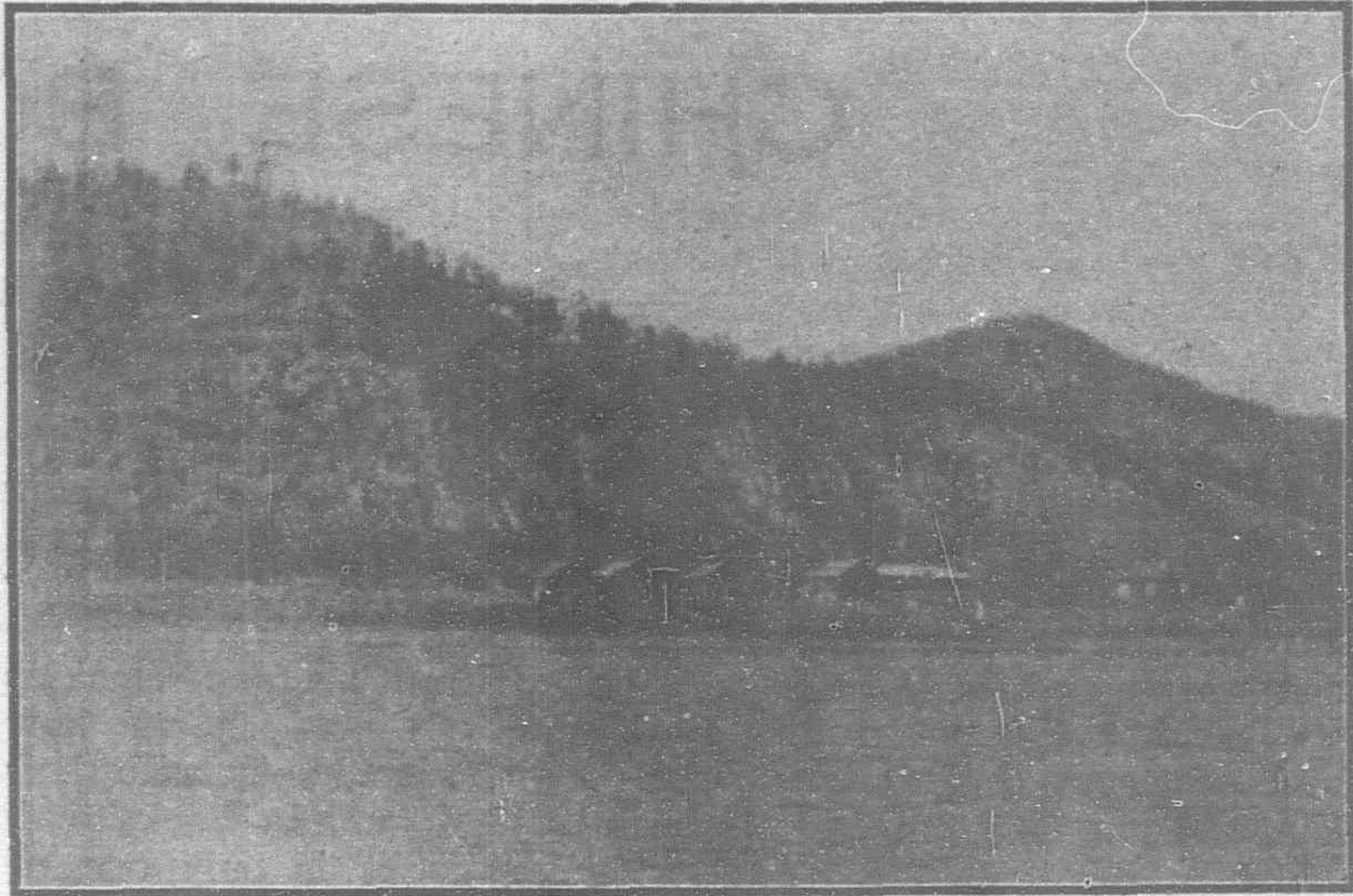
MONGOLIAN MARKET ENCAMPMENT IN NORTH MANCHURIA



YAMEN OF CHINESE GOVERNOR AT TSITSIHAR



WIDE BEND OF THE AMUR NEAR BLAGOVESHCHENSK



AMUR RIVER SETTLEMENT

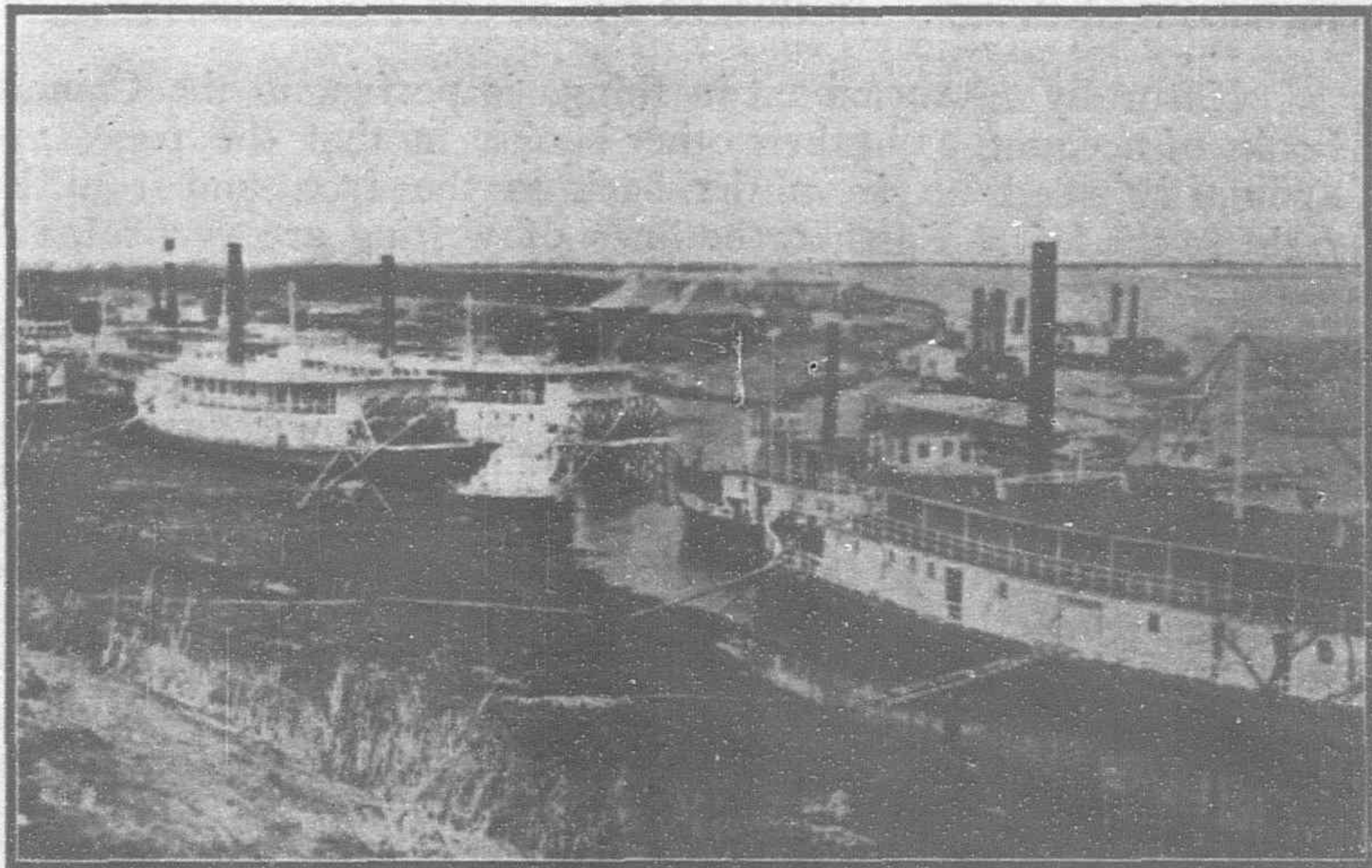
Between Tsitsihar and Mergen the railway will follow the valley of the Noni River, and will tap a country already largely cultivated.

The development so far undertaken in the territory would be sufficient to make the projected railway pay between Harbin and Mergen, but the section between Mergen and the Amur River is not likely to pay until colonists take up the land and develop the natural wealth. It is fair to estimate, however, that within three or four years after the opening of the line there will be sufficient freight to balance expenses. In addition to

the products of the country the line will also carry from the south imports such as machinery, cotton goods, tobacco, salt, paper, and other supplies for the colonists. Great need is felt for such imports owing to the present difficult means of transportation causing prices to be excessive.



RAILWAY CONSTRUCTION IN THE AMUR REGION



RIVER STEAMERS TIED UP FOR WINTER AT BLAGOVESHCHENSK



MONGOLIAN HOUSEHOLD IN HOLIDAY ATTIRE



MONGOLIAN SETTLEMENT IN NORTH MANCHURIA

CHINESE BOOK-KEEPING

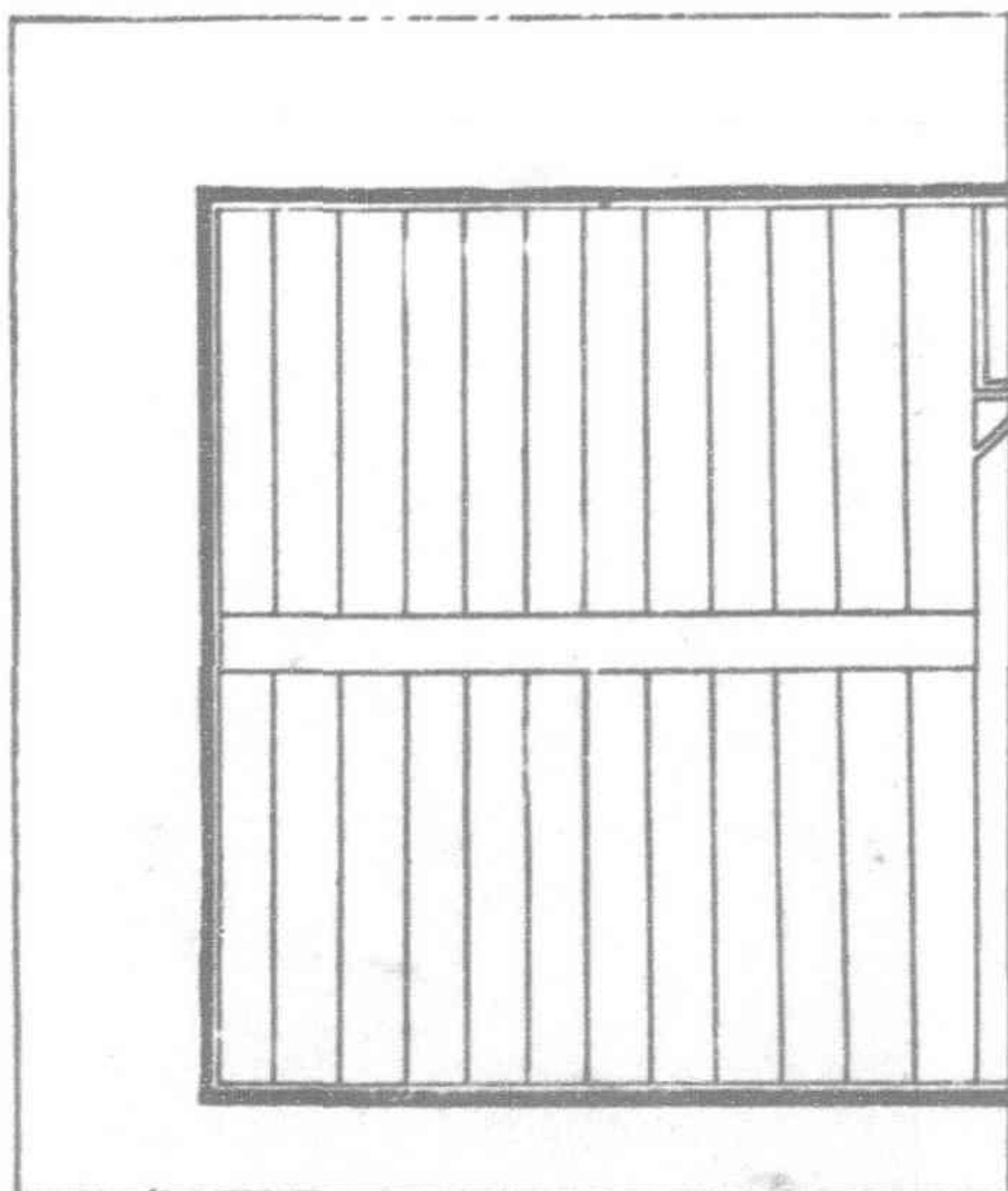
[BY RAY OVID HALL, M.A.]

Bookkeeping, like any other art, reflects the institutions and ideas of a country. Accordingly, the study of the bookkeeping methods of a people yields results of general and sociological interest as well as of technical value to accountancy. The ruling of account books, for instance, varies with the writing, the arithmetic, and the money systems of different peoples. Haskins ("Business Education and Accountancy") has shown how different was the ruling of the early Italian books with their cumbersome Roman numerals from that of modern books with their Arabic numerals. The ruling of books is only one of several details that show similar variations.

Having observed the peculiarities of Chinese dress, street traffic, writing, door knobs, and what not, the foreigner in China comes to look for inverseness and topsyturviness in all things Chinese. He concludes, more or less shrewdly, that the dominant theme in Chinese psychology is, to coin a pun phrase, *wrong-end-tuitiveness*. So in approaching the study of the bookkeeping methods originated by the natives, he naturally expects to find what, from the Western point of view, is a complete turnabout of things. In this, he will not be wholly disappointed.

Naturally the turnabout in things is perfect in the Chinese books of account, as in their other books, in that the pages are ordinarily filled up from the back to the front and from the right to the left. Further, the lines of writing are vertical, the finished appearance of an account being described by Dr. Arthur H. Smith ("Village Life in China") as resembling that of "two lines of washing hung out to dry." Again, the name of the account is appended to the upper right hand corner of the account, as if by after thought. But, while in the ruling of the Chinese account the two "sides" are not completely reversed, throwing the debits to the right and the credits to the left, the expected reversal was at least begun. It was arrested just half way around; so that the debits of the account occupy the upper half of the page and the credits the lower half. Another millennium or so of undisturbed development might have seen the turnabout complete.

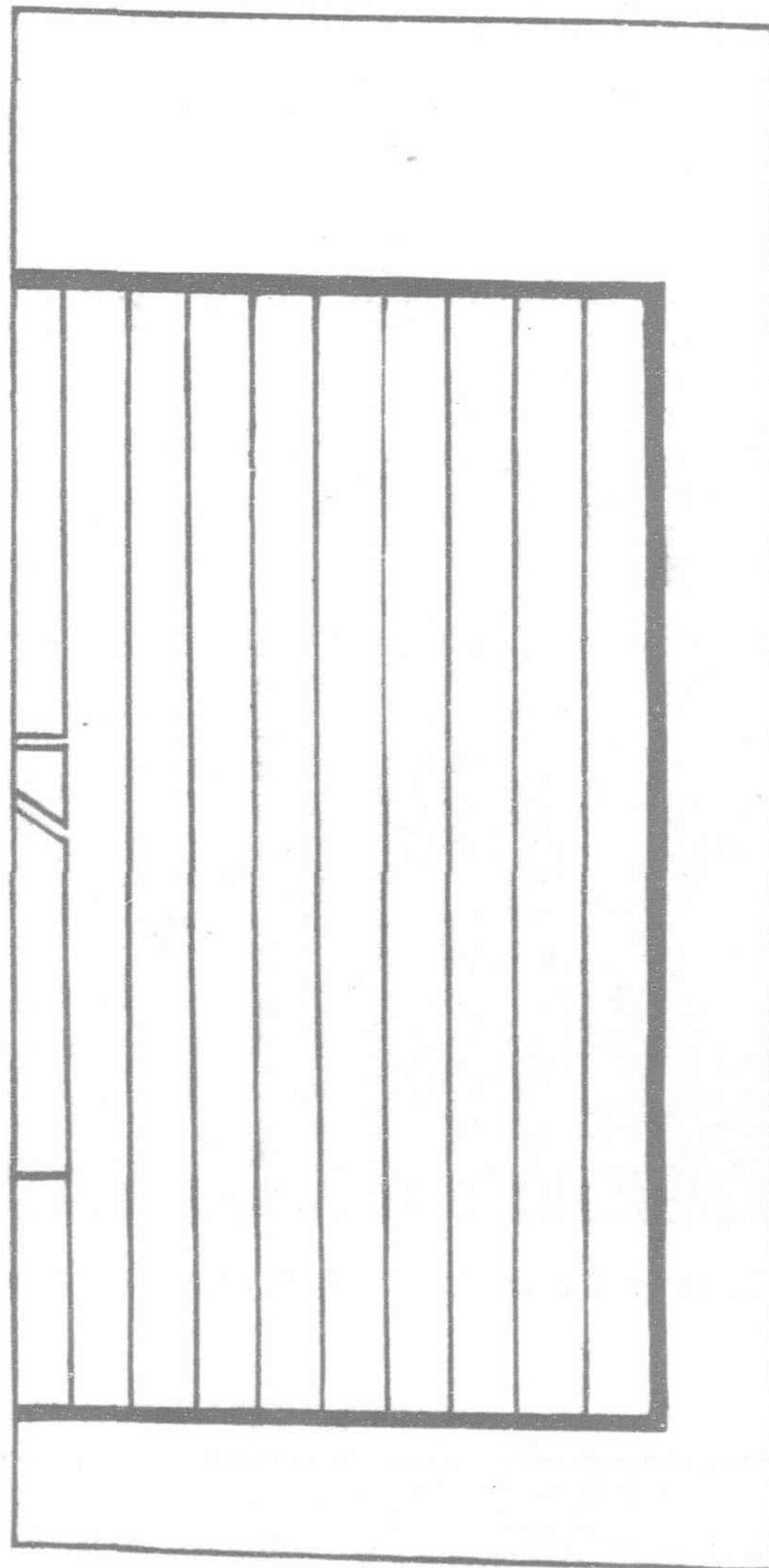
Below is a quarter sized ledger page illustrating the most common ruling of a Chinese account. The binding of this page is at the left.



Along with the dissimilarity of the Chinese account in form goes a surprising similarity in principle. Entries upon the upper or debit side of the account record things coming into the business or costing value; entries upon the lower or credit side of the account record things leaving the business or producing value. This principle applies to real and nominal accounts, like Expense and Cash, as well as to personal accounts. It is as if the present rather ragged single entry systems in universal use were the remnants of a golden age in Chinese accounting when double entry was the rule. At any rate, to change the present single entry systems to double entry requires no preliminary

tearing up of the fundamental things in it. The change requires only the inclusion of a few additional accounts constructed according to a rule already in vogue. In time the Chinese probably would have evolved the double entry system in practically the same way that the Italians did.

To Westerners, who are accustomed to a few books of widely various rulings, the number and uniformity of the books of a Chinese system are surprising. All books, whether of original or of permanent entry, are made similar to the ledger form illustrated above or according to the form below:



This form is used only for auxiliary books,—miscellaneous note books which are not posted and which do not receive postings,—or for certain "books of a single account" (explained later) of which all or nearly all the items are on one "side" of the account. The Furniture Account book is an example of the latter class.

In his "Village Life in China," Dr. Smith mentions that the village butcher kept fourteen different books. The Western trained accountant stands incredulous, he can conceive of no such profusion. Nevertheless it must be said that this village butcher is evidently only a village butcher with no especial love of booklore. Most shops in Peking keep from ten to twenty books. The Bank of China, though generally modernized in its accounting methods, must be the pride of the land; it uses eighty-nine books and registers. A certain pawnshop keeper in

Peking collected his statistics in twenty-two different books. His contempt for the comparatively simple systems of book-keeping taught his nephew at the Y. M. C. A. School of Commerce and Finance was at first unbounded. The nephew eventually succeeded in introducing a vastly more efficient system of six books. The uncle, in his heart of hearts, doubtless still sighs for the good old days when books were held in higher esteem. After all it is not Chinese but human persistently to fancy that somehow "effect must be proportionate to appliance."

The functions of the legion of books in a Chinese shop is not difficult to explain. One or more of them are what we should term blotters,—books in which to make temporary, hastily scribbled entries during the "rush" of business. Perhaps the rush never comes, but all entries are made in the blotter day book just the same. This superfluous type of book, still extant in American bookkeeping texts of three decades ago, finds warm sanction among the Chinese to-day. The Chinese love beautiful penmanship; and they are inveterate putterers. They are in fact guilty of some pure cases of *blotter ledgers*! A not uncommon method in Peking is to post daily from the books of original entry to a blotter main ledger and to transfer the postings every five days to a permanent main ledger.

But most of the books of a Chinese system arise from the practice of giving to each account, except personal accounts, a separate book of original entry all its own. Sometimes even a personal account, if of sufficient importance, is likewise favored with a separate book. This system gives a specific meaning to our loosely applied term, "account book." Further, it explains the uniformity of the books of a Chinese system. A certain coal store, for example, keeps accounts with Cash, Purchases, Sales, Expense, Freight, Salaries and Wages, and Proprietary withdrawals; and it keeps a separate book for each account in which items are entered during the day. At the end of each day, the cash expenditures are posted from the Purchases, Expense, Freight, Salaries and Wages, and Withdrawals account books to the lower half of the cash account book. Receipts from cash sales are of course posted in like manner to the upper half of the Cash account book. Such rare receipts or payments upon account as occur in this particular business are entered directly into the Cash account book. Evidently the coal shed manager is letting slip the opportunity of using two more books; perhaps he has not heard of our Accounts Receivable and Accounts payable controlling accounts and should be enlightened.

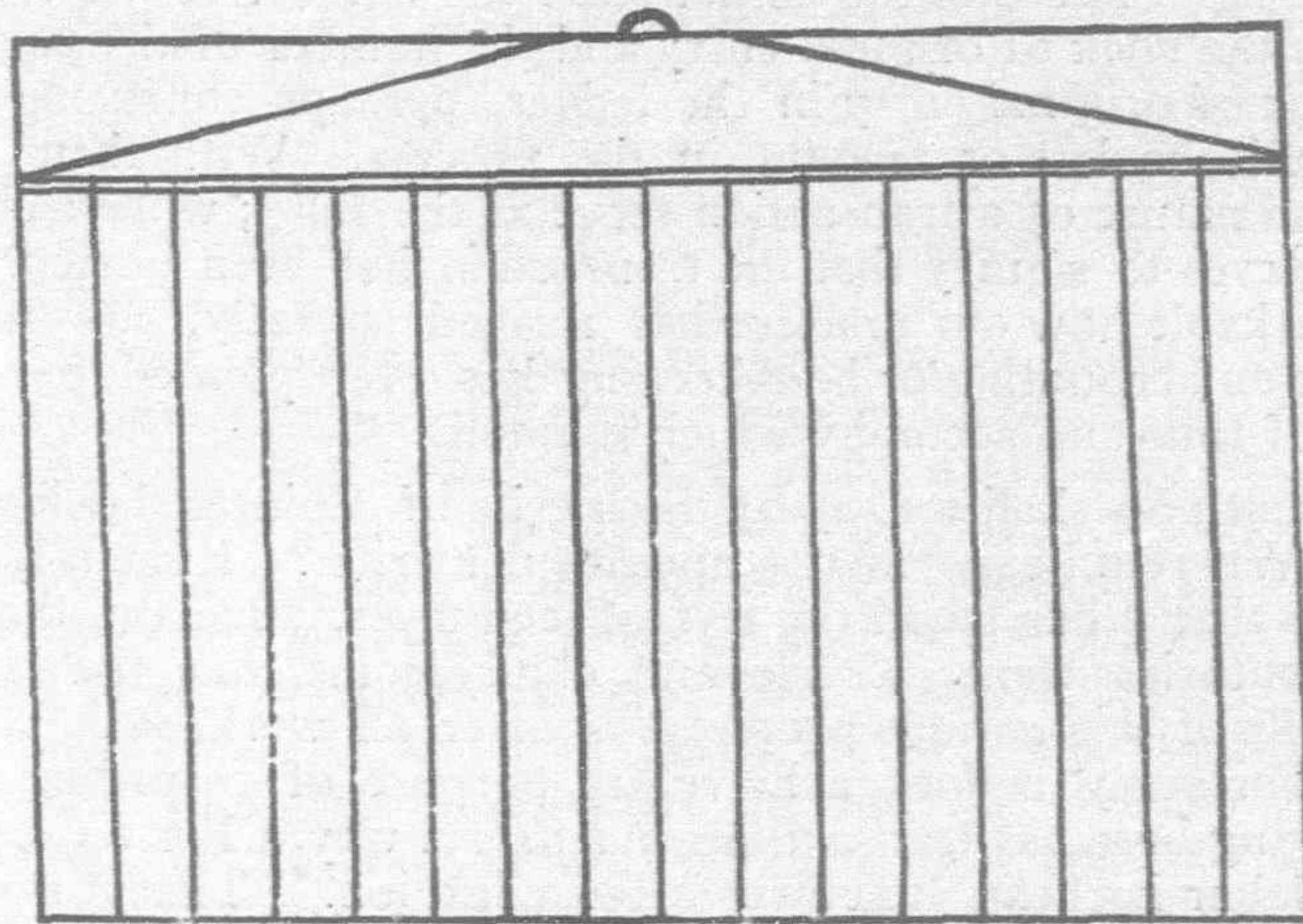
The items from all the account books mentioned above are posted daily to the "Ti Chang," or ledger. The fact that managers are willing to pay for this laborious transfer of transactions already classified for the sake of having all accounts in one book indicates that they would take kindly to the simpler method by which Westerners usually construct a single book of accounts. To the teacher of foreign accounting this is encouraging.

In most cases the proprietor's account is kept in a separate book. Westerners might term it the "private ledger;" but the Chinese, with characteristic solicitude for the *status quo* call it the "Ten Thousand Year Old Book." I am told that an old law, no longer enforced, required the manager of a business to keep a proprietary account showing the net worth and net gain of the business and to render annual statements to the government. This sounds like the paternalism exercised by the French government in accounting matters. Even now, some of the merchant guilds insist upon proprietary exhibits from their members. (Cf. Jernigan's "China's Business Methods & Policy.") Most systems of books about Peking seem to show the influence of these ordinances. The method current is to make the proprietary account show the loss or gains upon each business account. Perhaps no Profit and Loss account has ever been used in China.

The Chinese are prone to discommode themselves, as are we, by keeping a separate book for small payments. In a small shop this petty cash book serves chiefly to add one more volume to the library surrounding the bookkeeper.

The fourteenth book of Dr. Smith's village butcher was possibly a small, ruled blackboard about eighteen inches square hung on a nail back of the counter, in plain view of every one

entering the shop. Such a board is common in China. Upon it are chalked short time sales on account to the amount of a few coppers. Classified in Western fashion, it might be termed a petty customers' ledger. Long experience in the particular environment has probably proved the excellence of this device as a sort of silent *dun* and as an eloquent indicator of the magnitude of the transactions which the business sees fit to record in its paper books. The ruling of this *dun* ledger, which suggests the facade of the Parthenon is shown below:—



While the system of giving each account a separate book of original entry operates dreadfully to clutter up the bookkeeper's desk, it is not appreciably worse than the tendency of the Japanese to widen their books of original entry to infinity and give each account a special column. This cheap, unintelligent imitation of Western methods, common in Japan, transgresses the axioms of accounting quite as grossly as do the native methods of the Chinese. The Chinese error is preferable at least in that it does not leave acres of unused space in their books, nor conduce so much to the entering of items in the wrong account.

One's first impression of the books of a Chinese system is distinctly unpleasant. In turning their pages, one gets that weary sensation that invariably comes from finding that the leaves of a new book have not been cut: for each page has a double thickness. Since the Chinese bookkeeper makes his entries with a brush, some such precaution is necessary to prevent the ink from soaking through to the other side of the sheet. The books are made of coarse, yellow paper with red lines, and they have paper bindings. They do not give the same sense of durability that our heavy, leather bound volumes do. A shelfful of them might suggest the sociology of a people, but there is nothing about them to suggest the romance of a business. Withal they are unattractive in the extreme.

The cheapness of the paper and bindings of Chinese books of account is, of course, an adjustment to the very low standard of the living of the people. Books in which the average transaction recorded is so small as in China naturally could not be so expensive as those used, for instance, in America. The cheap paper binding is made doubly necessary by the large number of books employed. The retail price of a 7" × 9½" ledger of 100 pages, such as is common in Peking, is 20 coppers, or about 7 cents in American currency.

An astonishing fact concerning Chinese books, to be noticed in the model rulings above, is that there are no columns. The *suanpan*, or abacus,* which unfortunately is in almost universal use, obviates the need of entering the figures in vertical rows. It is probably this contraption which has prevented the invention of "posting mediums" (books, margins and special columns that save posting). It has also tended to prevent the Western

[*Note: The abacus, by the way, was carefully tested at the Peking School of Commerce and Finance last year and proved to be decidedly inferior in both speed and accuracy for general business purposes. (See "Peking Gazette," June, 1915).]

classification of books into those of original and those of permanent entry. Is it not true that much of our modern aversion to blotters arises from the unceasing search for new posting mediums in the books of original entry? At least it may be said that the abacus has been a most persistent enemy to the improvement of Chinese accounting.

Despite its mal-achievements, the abacus has something original to contribute to the art of accounting. By supressing all columns and demonstrating their uselessness when it is used, it has demonstrated the uselessness of folio columns, or, at least, of folioing. The Chinese do not enter the number of the ledger page in the book of original entry and the number of the page of the book of original entry in the ledger, perhaps confusing the page with the date or amount in the process. With them, the date and nature of a transaction serve as the folio; while a check mark serves to signify that the transaction has been posted. It is remarkable how our practice has thrived so fatly, how not a treatise on accounting or bookkeeping has ever pointed out the waste of time and accuracy which it entails.

What now shall we say of the merits of Chinese bookkeeping? Wherein lie its merits and its demerits? Evidently the merit is that it has stood the test of centuries, stagnant though those centuries were. Crude and cumbersome, like the lathes and drills of this curious people, it is after all workable. However laboriously, it does achieve its purpose of recording and classifying business transactions in a useful way. For a country where labor is cheap, it suffices after a fashion. That it is only a single entry system has not thus far been a serious defect; for, as many accountants will agree, single entry may do very well for small establishments. Considering the hundreds of milleniums that blind, blundering mankind required to discover the polished stone hatchet, the spindle, and the steam engine, the invention of Chinese bookkeeping stands as a tremendous triumph. It is one of the greatest achievements of a tireless, peace loving people.

Clearly there are great glaring defects in Chinese bookkeeping. It is a naive, ill-examined, dead level system with an insufficient variety of devices to be adaptable to the mammoth enterprises of the industrial age. Second, even in the present stage it wastes profligately the stuff that China most needs,—time. Finally, its large number of books of original entry greatly impedes the auditor. "Defective Accountancy," said Haskins, "may become the handmaid of financial corruption." If speaking of China, he should have said *defective Auditing*.

[Note. The author, who is principal of the Peking School of Commerce and Finance, gathered most of the information in his article from detailed reports made by a large number of the two hundred odd students in his school.]

CHINA IMPROVING FISHERIES

China's first fishery school was established at Woosung in 1904 by the Kiang-Chi Fishery Co. and was followed soon by the provinces of Chihli and Mukden, the curriculum in these schools being modeled upon that at Woosung. Fishery training schools for the practical improvement of fishing methods under the Ministry of Agriculture and Commerce were started in 1914 along the coast, in the provinces of Chihli, Chekiang, Fengtien, Fukien and Kwangtung, the province of Chekiang having three schools. The Chinese Ministry of Agriculture and Commerce, to encourage fishery on the high seas, on April 28, 1914, issued regulations to promote fishing on the high seas and a sum of \$50,000 was set aside in that year to be made an annual appropriation for the encouragement of the industry. Fishing vessels must be inspected before they can engage in this

business. Many fishing boats have since been rewarded for meritorious service, and it is expected that more money will be devoted to this purpose.

The ministry sent commissioners to the various fishing districts to investigate phases of the industry during the last three years, and their reports have been submitted and published. The points emphasized include: Kinds of fishery products, fishing seasons in different places, fishing vessels and the shipbuilding trade, the places where the fishermen come from, the yearly returns of the trade, the total number of ships lost each year, imports and exports of fishery products, duties and levies on this trade, and the best means of developing the industry.

JAPAN'S BROAD GAUGE

Dr. Soyeda, President of the Railway Board and Vice-President of the Gauge System Investigation Commission, explained in full the proposed broad gauge system bill at a recent meeting of the Investigation Commission held at the Railway Board Office. The gist of his statement was as follows:

The investigations of the proposed broad gauge system were carried out by the Railway Board based on four standards, namely, the ordinary narrow, special narrow, ordinary broad, and special broad gauge, taking into consideration the probable rate of increase in the freight and passenger traffic from 1926 to 1943 inclusive. If the narrow gauge system be adopted for the railway between Tokyo and Shimonoseki, the special narrow gauge is preferable to the ordinary one, but when the special narrow gauge is compared with the special broad gauge, the latter is preferable to the former. The reconstruction expenses for changing to the special broad gauge by 1943 shows an excess of 17,000,000 yen over that of the special narrow gauge, but when the business expenses after the reconstruction are compared, 2,430,000 yen can be saved annually by the adoption of the special broad gauge. On the basis of this fact the Railway Board has decided to adopt the special broad gauge.

The reconstruction expenses of the railway line from Tokyo to Shimonoseki in twelve years are estimated at 297,000,000 yen and those of other lines in twenty-five years at 297,000,000. These estimates are made on the supposition that an annual amount of 20,000,000 yen can be borrowed from the ordinary accounts of the Government, besides the railway profits, and if the loan from the ordinary accounts of the railway profits is increased, the time required for the reconstruction will be reduced accordingly. The estimated reconstruction expenses are the maximum figures, which will be lowered to some extent by the use of old materials and other economies. If the present narrow gauge system is continued and improved, it will cost 280,000,000 yen on the line from Tokyo to Shimonoseki, and 375,000,000 yen on other lines in the mainland, by 1943. The improvement expenses of the present narrow gauge railways, as compared with the reconstruction expenses by the special gauge system, show a decrease of 17,000,000 yen on the Tokyo-Shimonoseki line, and also a decrease of 222,000,000 yen on other lines in the mainland, but the business expenses of the special gauge railways favourably compare with those of the narrow gauge as already mentioned.

In addition to this fact, the broad gauge is, it is needless to say, far preferable to the narrow gauge in view of the national defences and the development of commerce and industries. If the present narrow gauge is to be replaced by the broad gauge, it is advisable to carry out the plan as soon as possible, for by so doing the annual improvement expenses can be dispensed with.

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JAPAN AND CHINA'S FOREIGN INDEBTEDNESS

On April 6 the Yokohama Specie Bank, the Japanese unit of the Five Powers Banking Group, announced that, under instructions from the Japanese Government, it intended to withhold payment of certain funds belonging to the Chinese Government. These funds represented the surplus of the Salt Administration revenue after making due provision for all the interest and other obligations charged thereon. By the terms of the Reorganisation Loan Agreement, of the surplus salt revenue sufficient has to be retained by the Group Banks collectively, to meet six months' obligations. Any sums not required for this purpose become part of the general revenue of the Chinese Government.

At the end of March in the Group Banks there was \$16,800,000, in which any money then in transit is not included. On April 6 the Group Banks were authorized to release \$5,800,000, of which \$800,000 was refunded as the Chinese Government had been paid \$800,000 at Chungking in Szechuan. The Banks, with the exception of the Yokohama Specie Bank, acted upon the authorization. The Japanese Bank explained that its refusal to abide by the terms of the Loan Agreement was due to the probability of the internal troubles in China causing a diminution in the revenues from Salt and Customs, thus endangering the interests of Japanese bond-holders.

As the Group Banks have possession of the surplus funds in a purely fiduciary capacity it would appear that the action of the Japanese Government in ordering a semi-official Japanese Bank to withhold their rendition is illegal. Whether that be so or not, and whether in any event Japan has given proof of good faith either to her associates in the Consortium or to China, it is not our immediate object to inquire. It will be of interest, however, waiving the question of the legality or morality of the action, to ascertain whether it was based on apprehensions possessed of any degree of plausibility. The official explanation was the probable endangerment of the interests of Japanese bond-holders, by a decrease in the revenue obtained by China from Salt and Customs. We will not, as we have indicated, discuss the justice of the action, but we will give a few figures that should convince the most sceptical that the reason alleged to justify it is without a shred of plausibility.

At an exchange of 2/8, and with the existing Boxer Indemnity contribution, the Salt Administration will have to pay during the rest of the year the following amounts;—

	Shanghai Taels.
9 more instalments of the Reorganisation Loan..	7,031,250
1 more Crisp Loan coupon	937,500
9 more contributions to the Boxer Indemnity at present rate of Shanghai Taels 928,555 ..	8,356,995
Chihli and Hupeh Bonds	600,000
Ta Ching Bank Loan 9 months at \$60,000 ..	394,200
	17,319,945

This represents \$24,726,000. As the Group Banks held \$16,800,000 at the end of March, there was almost sufficient in hand to discharge all obligations for the next nine months. To put it in another way, the collections for three months, during which an internal conflict was proceeding, were only short by some \$7,000,000 of the total amount chargeable on the revenue for the full twelve months. When these figures are considered it is obvious that there was no justification for the action of the Japanese Government in vetoing the payment. Even were the internal strife in China to attain much greater dimensions than there seems any reason to apprehend, it is a practical impossibility for the revenue during the next eight months to fall below the amount necessary to meet obligations.

From the fact that Japan vetoed the payment to the Chinese Government, while Great Britain, France, Russia and Germany had no hesitation in permitting it to be made, the natural inference would be that the interests of Japanese bond-holders are immensely greater than those of other nationals. Let us see what degree of authenticity attaches to this inference. Although

Japan is supposed to have supplied one-fifth of the Reorganisation Loan of £25,000,000, in actual fact no bonds at all were issued in Japan. Great Britain and France subscribed £15,000,000; Germany, £5,000,000; Belgium £2,000,000 while £3,000,000 was placed by the Russians in Russia, Germany and Belgium. An investigation of the loans charged upon the salt revenue shows that the only interest that Japan has is her share of the Boxer Indemnity, originally amounting to Yen 55,000,000. Taking the Boxer Indemnity into account, British interests are immensely greater than those of the Japanese. After Great Britain come France, Russia and Germany with interests amounting to £100,000,000, while Japan's total interests amount to the comparatively paltry sum of £5,000,000.

In view of the irrefutable facts adduced above the official defence of Japan's action in retaining the funds of which she is a trustee, is obviously inadequate and unconvincing.

THE QUEST FOR A CONSTITUTION

One certain outcome of the crisis through which China is now passing, irrespective of which of the protagonists prevails, will be the formulation of a Constitution in which, it is to be hoped, the mistakes of the past will be avoided. There has been no lack of activity on the part of Constitution-makers in China, but their efforts have not stood the test of practice. Even the Manchus, with the prescience that not infrequently attends the "sun-set of life," tried to prop up their tottering fortunes with a Constitution. So desperate were they that the Constitution that they offered practically deprived them of all power and left them only the shadow of sovereignty. In many respects this Constitution was almost as liberal as the Provisional Constitution drawn up at Nanking in 1912. But the offer came too late. On the point that the Manchus had exhausted their mandate the people were almost unanimous, and, consequently, no eleventh hour concession could avert abdication.

The Provisional Constitution of Nanking was in many ways a remarkable document. The powers that it gave the National Assembly were probably greater than those exercised by a legislative body in any country. It should be explained that the Provisional Constitution conferred these powers on a National Council which was to officiate until the convocation of the National Assembly, but in the regulations for the elections for the latter body, promulgated on August 10, 1912, it was explicitly stated that "Prior to the adoption of the Constitution of the Republic the powers and privileges of the National Assembly shall be the powers and privileges of the National Council as defined in the Provisional Constitution." This was also provided for in Article 28 of the Provisional Constitution itself.

A brief explanation of the powers that were thus conferred upon the National Assembly may be desirable. The Assembly was empowered to veto appointments made to the Cabinet by the Provisional President; to impeach the Provisional President or members of the Cabinet; to pass legislation in spite of the veto of the Provisional President. It will be seen that, in the event of a difference of opinion between the President and the Assembly, the former was practically powerless. The right of appointing members of the Cabinet was really held by the National Assembly, as it could constitutionally withhold its concurrence with any proposals made by the President in this connection. By a process of elimination it could obtain a Cabinet composed of men entirely under its domination, and keep it in order by the threat of impeachment. The President was given no power to dissolve the Assembly, and so refer any question in dispute to the people. In short, the Constitution placed Parliament in a position of supremacy, similar to that which Parliament arrogated to itself in Great Britain during the Interregnum, until Cromwell contemptuously swept it and its pretensions out of existence.

It is unnecessary to relate in detail the circumstances which led to the suspension of the National Assembly in November, 1913. From the very outset it was evident that the Kuomintang party, which dominated the Parliament, was determined to abate no jot of its constitutional powers. Into the merits of the

questions in regard to which the President and Parliament came into collision it is not essential to enter; it is sufficient to state that it was abundantly evident that progress was impossible until one side or the other was reduced to impotence. The President prevailed, the Kuomintang members of the Assembly were unseated and, as less than a quorum remained, the Assembly, in effect, ceased to exist.

Although the President had temporarily triumphed, it was obvious that if the Nanking Constitution were to continue to be operative a repetition of the struggle for supremacy was almost inevitable. Consequently a committee was appointed, to which Professor F. J. Goodnow and Dr. Nagao Ariga acted as advisers, to frame a new Constitution. This instrument made its appearance in May, 1914. By its provisions the relative position of President and Parliament were practically reversed. He was given most of the powers which, by the Nanking Constitution, were accorded to the Parliament. The right of the Assembly to veto appointments made to the Cabinet by the President disappeared, and with it the right to impeach members of the Cabinet and that of passing legislation over the veto of the president. The power of convoking, opening, proroguing or closing sessions of the Assembly was vested in the President.

The most superficial comparison of the Nanking Constitution of 1912 and the Constitution of 1914 shows that the intention of their respective framers was diametrically opposite. The Nanking Constitution sought to curtail the power of the Provisional President and to give almost unlimited power to Parliament. The Constitution of 1914 was designed to curtail the power of the Parliament and to give almost unlimited power to the Provisional President. The verdict that will be given after the dust of disputation has settled, will probably be that both sides failed to accomplish their object because of their inability to recognise that the people desired co-operation between President and Parliament and not conflict.

After her dearly-bought experience of the evil results that attend immoderation, China, it may be hoped, will insist upon securing in her permanent Constitution the judicious balancing of power upon which real progress and security depend. The interests of the country would be just as likely to suffer at the hands of an unrestrained Parliament as at the hands of an unrestrained President. The happy mean is the ideal to be sought, and if this golden fact has impressed itself upon the makers of the permanent Constitution that is shortly to be presented to the representatives of the people, as a result of the trials and tribulations of the last few years, all will yet be well. Even if the framers of the Constitution have not avoided the pitfalls into which their predecessors stumbled, the Citizens' Convention has it in its power to amend the draft, and it is to be hoped that, if necessary, it will exercise these powers with patriotic wisdom.

THE BANK OF CHINA

The rumours that were set in circulation in regard to the Shanghai branch of the Bank of China some little time ago were so evidently designed to effect a political object that they met with practically no credence in foreign circles. Instead of damaging the Bank, the effect of these rumours being circulated was to inspire the management to submit its books to one of the best known and trustworthy firms of foreign accountants in the Far East. After a careful investigation this firm was able to give the Bank a certificate of perfect financial health.

No inconsiderable progress has been made by China in regard to the adoption of modern banking methods. In the Bank of China and the Bank of Communications she has institutions that come well out of the ordeal of comparison with the great foreign banks operating in China. These two Government concerns showed a firm grasp of financial methods in connection with the issue of the domestic loans which have become a gratifying feature of China's national life. The factor most essential if internal borrowing is to be successful is, of course, confidence on the part of the people in the Government, but scarcely less essential is the organization by means of which

the way of the investor is made smooth. Much of the credit for the success which has attended the issue of domestic loans is undoubtedly due to the managements of the national banks.

The report in regard to the affairs of the Shanghai branch of the Bank of China is of such interest that its republication is entirely warranted. It reads as follows:—

In accordance with instructions received we beg to report that during the past week we have been making an investigation of the affairs of the Bank as shown in a Balance Sheet drawn up on March 4, 1916.

At the commencement we may say that all our requirements as investigators have been promptly and satisfactorily complied with.

Organization. We report that in our opinion your organization is excellent. Full schedules have been supplied, supporting the Balance Sheet items, in a manner entirely satisfactory; and we are confident that no other Bank could have done better. The accuracy of the Schedules is commendable when the rapidity of their preparation is considered. Each Schedule was very carefully investigated by us, and a very full comparison made with the actual books from which they were extracted.

Management.—This scarcely comes within the scope of our duties—but we are convinced the management is sound and careful because the organization of the staff is good, whilst we are satisfied that loans against security have been wisely and carefully made.

Bank Note Issue; Bank Notes of Other Banks; Bank Notes of Branches; Silver in Treasury, in coin and sycee:—

These we investigated on Sunday, 12th instant, a very thorough check being made. We are satisfied that the notes, coins and sycee said to have been in the Treasury on March 4, were in fact actually there.

Government Accounts.—It is very pleasing to report that there is no sign of abuse of privilege, and that instead of the Government being overdrawn (as might, possibly, have been expected) we were glad to find that in fact the Bank had Government Funds in hand to the extent of \$608,215.66 made up as under:—

	Due to Bank.	Due by Bank.
Fixed loans—	\$	\$
Provincial Treasurer of Kiangsu	200,000	
Overdraft on current accounts—		
Ministry of Finance.	685,551	
Interest paid on Government Bond under direction of Minister of Finance	160,000	
Temporary advances and sundry debtors—		
Ministry of Finance (Tls. 10)	13	
Special deposits—		
Provincial revenue, taxes and salt gabelle		
Balance due by Bank of China to the Govern- ment.	608,205	1,653,780
	\$1,653,780	\$1,653,780

Loans and Securities.—We have examined these very carefully, and have inspected the securities. We have been able to value certain of the securities ourselves, independently of the Bank, such as cotton (raw, yarn and ginned) piece goods, wheat, silk and rubber shares, and in each case there undoubtedly is a sound and safe margin.

In the case of loans against Government bonds, where being a Government Bank one might expect you to be more liberal than other Banks, we find the following Loans (in dollars) so secured:—

Loan	Govt. Bonds Face Value.	Market Value.	Margin.	Per cent.
35000	60000	42000	7000	20%
25000	40000	28000	3000	12%
93243	141000	98700	5456 about	6%
3147	10000	7000	3853 over	100%
2800	5425	3797	997 about	35%

Property, Land and Godowns.—These are valued in the balance sheet at \$406,881.90, but we have seen a valuation made by Messrs. Atkinson & Dallas in 1911 valuing the properties at Tls. 325,801 at ex. 73=\$446,302.74 or a surplus of \$39,420.84—and we understand the value of the property has increased since Messrs. Atkinson & Dallas made their valuation, and could be readily sold—we have seen the title deeds with declarations of trust attached, and they are in order.

Investments—	\$73,754 85—These consist of:—		
	Face Value.	Market Value.	Loss
8% Military Bonds	50,000	40,000	10,000
6% Internal Loan	28,175	19,722	8,453
Chin Hua Bonds	580	580	—
	\$78,755	60,302	18,453

and they appear in the statement at their market value which is in order.

Amounts Due by Head Office, Branches and Agencies.—As is usual in cases of this sort we have had to assume the accuracy of the figures submitted to us. The balances have, however, been carefully compared with the Shanghai books and agree therewith, and we have no reason whatever for doubting their accuracy.

Cost of Bank Notes \$12,049.31—This amount has been allowed to remain as an asset as we understand the cost is being refunded by the Head Office, and in any case it is an expense that quite properly can be written off over a number of years. The original cost of the notes was \$26,684.71 (in 1914) and since then over 50 per cent, has been written off.

In conclusion the position of the Bank is as follows:—

Total Assets	\$13,677,732.55
Less Liabilities:	13,642,463.97

Surplus of Assets over Liabilities at Shanghai 35,268.58

In addition to this surplus you have a secret reserve of at least \$39,420.84 between what your godown property cost you and Messrs. Atkinson & Dallas' valuation of 1911. The Head Office balance includes the profits of Shanghai yearly transferred to Peking, that would otherwise appear as Reserves of the Shanghai Office in the balance sheet.

In short we consider the financial position of the Bank in Shanghai to be satisfactory.

Bank of China, Shanghai Office.

Statement of Affairs at March 4, 1916.

Liabilities.	\$
Due to the public and to Government department	10,260,439
Bank notes in circulation	3,382,024
Surplus of assets over liabilities at Shanghai	35,268
	\$13,677,732

Assets.	\$
Due by the public and by Government department	3,507,068
Amounts due by Head Office, branches and agencies.	2,694,970
Cost of Bank notes	12,049
Furniture	1,250
Property, land and godowns, North Thibet Road, North Szechuen Road and Soochow Creek (at cost)	406,881
Investments (reduced to market value)	60,302
Reserve against note issue—	

At Head Office, Peking (in accordance with statutes)	400,000
In Treasury Shanghai	2,982,024
Cash in Treasury Shanghai	3,084,926
Deposits and current accounts with other Banks	548,259
	6,995,209
	\$13,677,732

Examined and found correct subject to our report of this date.
LOWE, BINGHAM & MATTHEWS,
Auditors.

Shanghai, March 16, 1916.

CHINESE PLANTS FOR AMERICAN USE

The results of a three years' trip in the Far East by a plant explorer of the United States Department of Agriculture have been summarized in a statement from that department*. Of the many specimens forwarded to this country during the expedition, the specialists regard as most significant the jujube, a fruit new to this country, which may be suitable for use in the Southwest; a wild peach resistant to alkali, cold, and drought, the root system of which offers great possibilities as a grafting host; certain Chinese persimmons larger than any hitherto known in this country; a number of aquatic food roots and vegetables which offer promising possibilities for the utilization of swamp land; some 30 varieties of vegetable and timber bamboos; and a number of Chinese vegetables, bush and climber roses, shrubs, and trees.

This trip just concluded is the third expedition into China to discover new plants suitable for introduction into the United States. The three expeditions together have yielded for planting and testing for commercial adaptability seeds, roots, or cuttings of some 3,000 food and forage plants, flowers, ornamental shrubs and vines, shade and timber trees. The earlier expeditions brought specimens of many cold-resistant and dry-land grains, sorghums, soy beans, alfalfas, and forage plants, and also certain semitropical plants, such as the bamboo, which are now under experimentation to determine their usefulness for the extreme South.

* A full account of the discoveries of Plant-explorer Meyer was published in the Far Eastern Review for July, 1915.

CHINA REVERTS TO REPUBLICANISM

Yuan Shih-kai Abandons Absolutism

The immediate effect of the Mandate of Renunciation, by which President Yuan Shih-kai cancelled the monarchy, was, as recorded in our last issue, to bring back to office Mr. Hsu Shih-chang, who resumed duty as Secretary of State. It was hoped that the Southern republicans, as the main object for which they had taken up arms had been achieved, would agree to a speedy cessation of hostilities. No indication that they were prepared to adopt this course was immediately forthcoming.

The Central Government proceeded methodically to make the necessary adjustments in view of the change in the form of government. The Republican Calendar was restored. A special session of the Tsang Cheng Yuan was held on March 25, which was attended by Mr. Hsu Shih-chang as representative of the President, to frame a reply to the Mandate cancelling the monarchy and returning the petitions advocating its restoration to the Yuan. The terms of the reply sent to the President are (*Peking Daily News* translation) as follows:—

On the 22nd inst. this House received a despatch from the President to the effect that "I hereby declare that I still recognize that the memorials and documents transmitted to me through the Acting Li Fa Yuan in connection with the request for enthronement are inconsistent with the present condition of this country. The Bill passed on the 11th day of 12th month of last year on the recognition of monarchy is hereby cancelled, and the State Department is hereby instructed to return to the Li Fa Yuan all the petitions urging enthronement from the provinces and special administrative areas, so that they may be returned to the original petitioners to be destroyed, etc." On the same day we received a despatch calling for an extraordinary session of this House on the 23rd instant; and we also received all the above mentioned petitions, etc.

On the 25th instant a sitting was held in this House, and it was resolved, that all the petitions should be returned on that day. It will be remembered that on the 11th day of the 12th month of last year a Bill was passed by this House to the effect that all laws and mandates which were not in conflict with the monarchical form of State should remain in force, etc., and this Bill was duly promulgated by a special mandate. As now the Bill on the recognition of monarchy has been cancelled, the above Bill should therefore also be cancelled.

A proposal was made that the Tsan Cheng Yuan should ask to be dissolved to show its contrition for having advised the change in the form of government. This was adopted and a message in the following terms (*Peking Gazette* translation) was sent to the President:

Some time ago the Acting Li Fa Yuan, in the name of the principal Representatives of the People, submitted to the President the "designation petitions." Now those petitions are returned to be destroyed. It is clear that the Great President wishes to maintain the Republic and thereby to save the precarious situation. We express our illimitable admiration for such an act. Since this Yuan rashly advised the President to accept the Throne, thus causing complaints to come from many quarters and thereby tarnishing the high virtue of the Great President, this Yuan is no longer capable of representing the real and true will of the people in its official discussions. The Organization law of the Li Fa Yuan, while providing for the maximum length of the extraordinary session gives no minimum limit. It is plain, therefore, that it will not be a violation of the law if the Yuan closes after holding only one or two meetings. It is proposed that this Yuan should request the Government that the discussions of the extraordinary session should be limited to the restitution of institutions made null and void by the adoption of the monarchy. Other matters should be left to the discussion of the organ elected according to law and representing the people, with a view that the expectations of the people may be satisfied and honesty made manifest.

A mandate was issued on March 27 reviving all the Laws that had been suspended when the change in the form of government had been made.

From the tone of the Chinese newspapers in Shanghai and elsewhere which had supported the Yunnan movement from the outset, it became evident that the cancellation of the monarchy was regarded as a sign of weakness. While not unanimous on the point, it was apparent that a large number of the anti-monarchists would be satisfied with nothing less than the

resignation of the President and the punishment of those who had taken a prominent part in the monarchical movement. Even more extravagant demands were made in some quarters. It was suggested that the President and his chief supporters should suffer decapitation and confiscation of their estates, while for three generations the Yuan family should be debarred from holding official positions in China. There is no reason to suppose that the section that put forward these demands was representative of any influential body of opinion, but the mere fact that such demands were made showed that the action of the Government in cancelling the monarchy was held to be an admission that it was terror-stricken and unable to resist any pressure that might be exerted. That this opinion was held in more responsible quarters was shown by the action of Mr. Tang Shao-yi, formerly one of the President's closest friends, in sending a telegram to His Excellency couched in decidedly brusque terms, stating that his resignation was imperative.

On the other hand, several of the Military Governors telegraphed to the President assuring him of their support, and announcing that, if those who had taken up arms against the Government did not accept the cancellation of the monarchy as a settlement, they would assist to crush them by military force.

In continuation of the record of the important developments taking place in China it has to be noted that thirty-seven members of the National Assembly of 1913, representing seventeen provinces of China, and the oversea Chinese emigrants, on March 27 sent a telegram to the Foreign Ministers in Peking, couched in the following terms:—

To Their Excellencies the Ministers of the Friendly Nations at Peking:—

Ex-President Yuan Shih-k'ai, by proclaiming himself Emperor, violated his oath of office, and rendered himself guilty of high treason. He can therefore no longer be considered the Chief Executive, but is indeed the common enemy of the people. For this reason, as long as Yuan Shih-k'ai remains in power, the country will be in a state of civil commotion, and the hope of the friendly nations to see peace and order reign in this land will never be realized.

Finding himself in a helpless condition, he has ordered the cancellation of the monarchy. He hoped thereby to deceive both our own people and foreigners, and to thus bring about a compromise until a more favourable opportunity should arise for the gratification of his selfish ambitions.

The crime of high treason, from a legal standpoint, is unpardonable. Moreover, his duplicity in see-sawing between the roles of Emperor and President is child's play. How, then, can we allow him to be so shameless as to revert to his former position? We, the undersigned, voicing the sentiments of the entire nation, have therefore solemnly pledged ourselves to deprive him of his power in order to eradicate the source of all these political upheavals. We cannot sacrifice the future peace and safety of the state to any evanescent compromise which may be suggested. This is also the attitude of the Righteous Armies of Yunnan, Kweichow, and Kwangsi.

We therefore venture to address this communication to your Excellencies, and to ask the favor of your transmitting the same to your respective Governments and peoples, so that they may know that the citizens of the Republic of China are determined to uphold the supremacy of the law and the constitution of the land, and to bring to justice the national betrayer. We will not rest until we have attained our object. We trust the friendly nations will see through the duplicity of Yuan Shih-k'ai and approve the inevitable course to be taken by our citizens.

Respectfully submitted.

On April 1 the Council of State held a meeting in its capacity of acting National Assembly. A despatch from the President relative to the decision of the Assembly to limit its activities to the restoration of republican institutions was read. The *Peking Daily News* summary of the despatch is as follows:—

We have received a despatch from the Acting Li Fa Yuan stating that as the Yuan took a rash step by recommending the

restoration of monarchy, it has lost the confidence of the people, putting the President in a difficult position, and is not now worthy to represent the will of the people. Therefore the discussions of the Yuan should be confined to the problems connected with the cancellation of the monarchy, and the rest of the State affairs should be reserved for the decision of the coming formal Li Fa Yuan, etc. We hereby point out that the right and power for the Acting Li Fa Yuan have already been provided for in the Constitutional Compact. If important questions arise during the time when the formal Li Fa Yuan has not been organized the said Acting House should sit in accordance with the provisions made in Article 67 of the Constitutional Compact, etc.

The Assembly passed bills cancelling the constitutional monarchy and cancelling their own appointment as Principal Representatives of the People.

A Mandate was published on April 3 in relation to the proposal to convert the Citizens' Convention into the National Assembly. We quote the *Peking Daily News* translation:—

Some time ago when we were in a hurry to introduce a Constitutional Government, it was considered necessary that a legislative organ should be organized immediately. We therefore sent a despatch to the Acting Li Fa Yuan consulting its opinion, and a resolution was passed to the effect that the successful candidates of the Final Election of the Citizens' Convention should be considered as successful candidates of the Li Fa Yuan, etc. Later on, on the 27th day of the 3rd month, we received another despatch from the Acting Li Fa Yuan stating that a resolution was passed re-enforcing all laws and mandates promulgated during the time of Min Kuo. Both of the above resolutions were duly promulgated by Mandates.

Among the present laws and mandates of Min Kuo the most important ones are those connected with the Constitutional Compact, such as the Laws on Organization of the Citizens' Conference, and of the Li Fa Yuan, and on the Election of the Members, etc., the enforcement of which will show the spirit and energy of the Min Kuo. When we submitted to the Acting Li Fa Yuan, the bill on the Candidates of the country provided for in the Constitutional Candidates of the Final Election of Li Fa Yuan, we desired to hasten the introduction of a constitutional Government. Such measure, however, was only intended to meet the requirement of the time.

I, the President, have now carefully and respectfully declared that all the laws and mandates of Min Kuo should continue to have their effect; hence it is imperative that the original laws on the Organization and the Election of the Citizens' Convention and Li Fa Yuan should be strictly enforced, and that all the procedures provided for therein should be carefully followed. Thus the principle to enforce constitution and to respect the will of the people will be made known to the country.

It is hereby ordered that the persons some time ago elected in the Final Elections of the Citizens' Convention shall remain as successful candidates of the final election of the Citizens' Convention in accordance with the Laws on the Organization of the Citizens' Convention; and that the Mutual and Single Elections of the said Convention shall be proceeded with as provided for in the law. The procedures for the making of the Constitution Compact shall be carefully followed. As to the election of the members of the Li Fa Yuan, preparations shall be made to proceed to the election without delay in accordance with the provisions made in the Law on the Election of the Li Fa Yuan. As soon as the preparatory works are completed a date shall be fixed for the convocation of the Li Fa Yuan. Thus due respect will be given to the Laws, and the foundation of the nation will be well laid.

While these legislative measures were being taken the position in regard to the relationship between the Central Government and the "Independent" provinces remained obscure. Although no formal truce seems to have been arranged, very little fighting took place. Both sides claimed some minor successes, but it was evident that there was a tacit agreement to abstain from any large scale operations pending a possible compromise. The position in Kwangtung gave rise to some apprehension. The loyalty of the Military Governor, General Lung Chi-kuang, was not doubted, but the fear was entertained that he might not be able to withstand the pressure of the revolutionaries. Owing to the censorship it was difficult to learn definitely what was occurring in Kwangtung, but the large number of people who fled from Canton to Hongkong and Macao, showed that the public feared an outbreak. The troops at Swatow and one or two other places revolted, and announced their intention to cast in their lot with Yunnan, Kweichow, and Kwangsi. In these circumstances General Lung adopted the discreet course of endeavouring to preserve the *status quo* as far as was possible.

No official negotiations were opened between the Central Government and the revolutionaries, but in many quarters efforts were made to find a basis for compromise. The Government,

as mentioned earlier, received promises of support from many of the Military Governors, and on April 5 the *Peking Daily News* reported that the Military and Civil Governors, Defence Commissioners, Occupation Commissioners, and Commanders of Army Division of nineteen provinces had addressed the following telegram to the Government:—

We, Kuo-chang, Yao-lin, and others, have forwarded a telegram to Kwangsi signed by the high officials of nineteen provinces and the following is the text of the same:—

Advice for Kwangsi

"To General Lu, the Shang Chiang Chun, General Chen, the Defence Commissioner, and other gentlemen,—We have now received a clear Mandate cancelling the monarchy. The Central Government has "condemned" its own actions with the hope of restoring peace and tranquillity to the people. It has none other purpose than to effect the salvation of the people and the country. The present situation of our country has become more and more critical every day, and there is every reason to believe that great disaster may overtake us at any moment. Unless all the people of this country should act with one accord, the dismemberment of the nation cannot be averted. If the internal dissension and quarrel should continue outsiders will no doubt interfere; and if the nation should perish the blame will be on us. When we think of the situation we cannot help to shed our tears and break our hearts. You gentlemen, who have been actuated by patriotic motives to resort to extraordinary actions, have now obtained your objects because there will be no change in the form of Government, and the Central Government has employed again the services of men of experience and talents. It is therefore imperative that you should at once lay down your arms. Since the declaration of independence in your province we have not been able to learn the real situation there owing to the interference of communications of your Province with us. However it is not hard for us to guess what has taken place in your province. You may have maintained perfect order and peace, and you may have made excellent preparations to meet every emergency; but your merchants and traders will never be able to get rid of the anxiety of the misery of the coming war and devastation. They will always be in fear nor can they enjoy their food and sleep on account of the coming calamity. You must therefore think of the critical situation and the hard condition of the people, and put forth your efforts to work out their salvation. This is high time for you to cancel or withdraw the declaration independence, and to work together with us for the peace and order of the country. Thus the mind of the people will be settled, and the people will praise your wise decision, which will have great consequence upon this country. Although it is the power of the Central Government to administer the affairs of the State, you may hereafter give your suggestions regarding reforms which should be introduced in all branches of administration, and we, Kuo-chang and others, are also willing to consult with you and to hear your advices and counsels. We hope that we may have a strong and powerful Government. It is our duty to devise means to secure peace and tranquillity for the nation, lest outsiders should avail themselves of the opportunity to destroy our national existence. We have now expressed freely our opinions as we are in a common danger. We have also telegraphed to Yunnan and Kweichow serving them our faithful advice, and we hope that you will also give them advice, so that they may lay down their arms and be reconciled to us.

Advice for Yunnan and Kweichow

After sending a telegram to Kwangsi, we have also prepared the following joint telegram for Yunnan and Kweichow:—

"To ex-Chiang Chun, General Liu, ex-Defence Commissioner, Generals Tsai and others. When you gentlemen started the revolution we, Kuo-chang and others, sent you a telegram expressing our opinions in most earnest terms, and stating that should there be differences of political opinions compromise should be employed because as soon as a civil war should break out the people would be afflicted with all kinds of misery. However our faithful advice has not been regarded, therefore the districts in Southern Szechuan and Western Hunan have met with unusual calamity from the military operations. We are not going to discuss which side is in the right and which the wrong, but we will point out that before anything has been gained the poor innocent people in the south-west have already suffered great misery for several months. Now the Central Government has cancelled the monarchy which was about to be introduced, and consequently your original object has been realized. If you should continue to resist the Government it will prove that your declaration of patriotism and the love of the people is false, and that you have been actuated by a selfish motive for power and wealth. The situation is most critical and if you do not change your mind but continue to fight the Central Government the people will blame you should any untoward events happen. We, Kuo-chang and others, who are responsible for the protection of the nation, will do our best to maintain the union of the country. As old friends we have tendered our faithful advice, and we hope that you will lay down your arms in an early date so that the country will enjoy peace and order again. We hope you will not try to oblige others but will make your own decision regarding the matter. Should there be any difficulty you may let us know, and perhaps we may assist you to settle it.

A report was circulated on April 5 to the effect that Kuangsi had revoked its declaration of independence. This was refuted by a telegram signed by Lu Yun-ting and Liang Chi-chao which read as follows:—

Yunnan, Kueichow and Kuangsi are united by working in the common cause to uphold the Republic of China. The report which has reached here stating that Kuangsi has formally cancelled its independence is not true. Kuangsi will never conclude peace with Yuan's government separately, nor will she trust the Peking government and cancel independence without the approval of Yunnan and Kueichow. Though the province has received many telegrams from Peking requesting the appointment of representatives to attend the peace conference at Shanghai or Peking, so far only one reply has been given, i.e., Kuangsi declares that until Yuan Shih-k'ai resigns there is no chance of peace. This is the Kuangsi republicans' real attitude. We have never sent telegrams to Peking cancelling the Kuangsi independence.

The Kwangsi rumour was counter-balanced by reports that various provinces either had declared independence or were on the point of doing so, and that the anti-Government forces had regained possession of Suifu, Nachi and Luchow. From the confusing cloud of rumour one certain fact emerged on April 7—the secession of Kwangtung from the Central Government. In the circumstances no great surprise was felt that General Lung Chi-kwang had been unable to maintain the loyalty of the province. As already recorded local declarations of independence had been made in several parts of the province, and the forces at General Lung's disposal were insufficient to maintain his authority. Moreover rumours that a large number of Northern troops were to arrive by sea filled the people with apprehension, in view of the many reports that northern troops had committed grave excesses in the other localities to which they had been sent. As far as can be gathered from the somewhat conflicting and fragmentary information that has been made available the declaration of independence was not attended by any fighting as far as Canton was concerned. The exodus to Hongkong and Macao continued, however, as it was generally feared that the incidents which had attended former changes of government in Kwangtung would be repeated. As in Szechuan bands of robbers began to turn the prevalent unrest to account, and there was a justifiable apprehension that the potentialities of Canton to the looter might prove irresistible. One official of note, Mr. Tsai Nai-huang, Opium Commissioner, who a short time before had been appointed Director of Defensive Measures in Kwangtung, was executed as a punishment for recommending that Northern troops should be sent to overawe the province. General Lung Chi-kwang retained his post of Military Governor, and the Civil Governor also remained in office, but the direction of affairs seems to have been assumed by a kind of committee comprised of members of the two sections of the anti-Government party. Apparently there were divergencies of opinion in regard to the precise object for which independence had been declared, and reports reached Peking that these differences led to open conflict as a result of which several of the committee were killed.

What effect the secession of Kwangtung had on the Government's plans is not quite clear. A number of troops in the North were under orders to proceed to Kwangtung, but a difficulty arose owing to the reluctance of the China Merchants Company to permit their ships to be used for this purpose. However, some of the troops had actually started for an unknown destination when a fresh complication arose through Chekiang declaring independence. General Chu Jui, the Military Governor of Chekiang, had maintained perfect order in the province notwithstanding the fact that former adherents of the notorious Chen Chi-mei were doing their best to stir up trouble. Fear of the arrival of Northern troops seems to have led to the final overthrow of General Chu Jui and severance of connection with the Central Government on April 12. Apparently this action on the part of Chekiang was not taken in accordance with any understanding with the other provinces that had already declared independence. A Presidential Mandate on the situation in Chekiang, which was issued on April 14, was, according to the *Peking Daily News* translation, couched in the following terms:—

To-day we have received a telegram from Chu Yin-kuang, Governor of Chekiang, to the following effect: "On the 12th inst. at 4 a.m. a number of troops and people suddenly rushed into the office of the Chiang Chun. In the time of disorder the Chiang Chun disappeared and his whereabouts have not yet been ascertained.

Immediately I secretly sent police to give protection to my office, and when the day broke military officials and members of gentry, who were anxious for the maintenance of peace and order of the City, compelled me to assume the title of Tutuh. I firmly refused, but after a long consultation at 4 p.m. the chief officials of various Government organs together with the representatives of gentry and merchants sent in again their joint request to me. Finally they requested me to retain the title of Governor and at the same time act concurrently as Commander-in-Chief of the Chekiang Army so that the peace and order of the locality might be maintained. As they did not allow me to refuse any more, I consented this morning to their request with the hope of controlling the soldiers and the people and maintaining peace and order. The mind of the people has now been settled and normal condition has been obtained, etc."

The said Governor being a man of experience and ability has been highly respected by the troops and the people, and his services to the Central Government are indeed very valuable as he has saved the situation of Chekiang. He is hereby given the brevet rank of Chiang Chun, and is appointed to act as Director of the Military Affairs of Chekiang. At this critical time the said Governor has exerted his utmost to save the general situation by his energy and enthusiasm. It is hoped that he will be able to maintain the situation till the end, as he has already won for himself a great reputation and influence, and to assist in settling the situation of the country. He is hereby ordered to instruct the troops and the people, showing them the general situation of the world of to-day and urging them to love their country, so that they may understand that their duty is to obey the will of the superiors. Thus they will be able to secure peace and order for various localities. By the promotion of the interest of their native lands, they will at the same time serve the interest of the whole country. I, the President, have great hopes of them.

Early in the month a truce for a few days was arranged between General Chen Yi, Military Governor of Szechuan, and General Tsao Ao, the leader of the Yunnanese troops. This was afterwards extended to a month, and in the meantime endeavours were made to find some basis for a compromise. One section of the anti-Government was averse to accepting any terms that did not include the retirement from office of President Yuan Shih-kai, while another was prepared to agree to the President remaining the titular head of the State with greatly restricted powers. It was generally understood that the President was willing to make great concessions to meet the views of the Southerners, including the formation of a responsible Cabinet that would include several of their leaders. The negotiations, unfortunately, made very slow progress in consequence of the absence of a common understanding among the leaders in the independent provinces.

In spite of the disturbed state of the country, revenue, particularly from the taxes on salt, continued to flow into the Treasury satisfactorily. A sum of over \$5,000,000, representing the surplus revenue from salt taxation after making provision for loan charges, was placed at the disposal of the Central Government, but the Yokohama Specie Bank, acting under instructions from the Japanese Government, refused to hand over the portion of this amount which had been entrusted to its care. This incident is dealt with in our editorial columns. As a result of the representations made by the Japanese Government it is understood that the British, French and Russian banks were instructed not to pay further sums available from surplus salt revenue until sanction had been obtained from their respective Governments.

The unofficial report that the formation of a responsible Cabinet had been decided upon was confirmed on April 21 when a mandate in the following terms (*Peking Gazette* translation) was promulgated:—

It is a recognised principle that centralisation should be the policy of the administration as it establishes direct responsibility. In view of the necessity of promptly attending to the multitudinous affairs of the State, I the Great President some time ago assumed full control of the powers of administration and appointed a Secretary of State in order to assist me in the work of government. During two years I have been labouring with my utmost ability but the success achieved has been insignificant. Examining the root of this failure, I find that it has been due to the absence of a Cabinet and the consequent lack of direct responsibility. The fact that I have merely assumed the appearance of an unlimited control of all powers of the State has been the cause of dissatisfaction on the part of the people. In these circumstances I have decided to effect drastic changes with a view to a thorough and energetic reform. In accordance with Article 21 of the Constitutional Compact, the mandate for the organisation of a responsible government is hereby promulgated; and the Secretary of State is hereby authorised to take full control of the affairs of the State and to organise a

government with the Ministers of the Metropolitan Ministries as members thereof who are to be mutually responsible to and for one another. This is intended in the sense of a step towards the formation of a responsible government and the beginning of administrative reform. I hope that the members of the government to be organised hereunder will work unitedly and faithfully in order to remedy the difficulties of the day. In this I have great hopes.

Simultaneously mandates were promulgated, one on the organisation of the Government, the other placing the official system under the direct control of the Government, as follows:—

Mandate on the Organisation of the Government

Art. 1. The Government shall consist of Ministers of State.

Art. 2. The Secretary of State and all the Ministers of the Ministries shall be called Ministers of State.

Art. 3. The Ministers of State shall assist the Great President and shall bear responsibility;

The Secretary of State shall be invested with power by the Great President to take full control of the affairs of the State;

The Secretary of State shall counter-sign all laws and mandates issued and other documents connected with the affairs of the State.

Art. 4. All affairs of the State shall be decided and enforced at meetings of the Ministers of State at which the Secretary of State shall be the Chairman.

Art. 5. The Secretary of State may issue governmental orders within the limits of his power and authority or when specially invested with power to do so.

Art. 6. The State Department [Cheng Shih T'ang] shall be the central organ of the affairs of the State and under the control of the Secretary of State. Officials of the State Department shall be fixed by separate systems.

Art. 7. This mandate shall come into force on the day of promulgation.

Official System Under the Direct Control of the Government

Art. 1. The following bureaux and department shall be under the direct control of the State Department. Their organisation shall follow the provisions of their respective official systems:—

The Bureau of Law Compilation;

" Important Affairs;

" Civil Appointment;

" Statistics;

" Printing and Engraving;

The Department of General Affairs.

Art. 2. To each Bureau and Department shall be appointed a Chief who shall, under the direction of the Secretary of State, control the affairs of his Bureau or Department and supervise the officials thereof.

Art. 3. The State Department shall have eight Councillors of State, who shall, under the direction of the Secretary of State, consider and discuss all laws and mandates.

Art. 4. This official system shall come into force on the day of promulgation.

The attitude of General Feng Kuo-chang, the Military Governor of Kiangsu, had been from the outset a matter of doubt. While it was known that he was not inclined to join in any military anti-Government operations, and had, indeed, in effect aligned himself on the Government side, there were indications that he considered that a certain detachment would not be indiscreet in the circumstances. Consequently no great surprise was felt when a Reuter telegram from Shanghai dated April 21 reported that General Feng had announced the neutrality of Kiangsu on April 17. Some days later it was denied that General Feng had taken any steps in the direction reported.

On April 22 it was announced that General Tuan Chi-jui, formerly Minister of War, had consented to form a responsible Cabinet. Later on the following cabinet was announced:

Premier	Gen. Tuan Chi-jui.
Minister of War	Gen. Tuan Chi-jui.
Minister of Foreign Affairs	Lu Chen-hsiang
Minister of Interior	Wang Yi-tang.
Minister of Finance	Sun Pao-chi.
Minister of Navy	Liu Kuang-hsiung.
Minister of Justice	Chang Chung-hsiang.
Minister of Education	Chang Kuo-kang.
Minister of Agriculture and Commerce	Chin Pang-ping.
Minister of Communications	Tsao Ju-lin.

When this report closed on April 21 little progress had been made in the direction of the arrangement of a compromise.



GENERAL TUAN CHI-JUI, PREMIER AND MINISTER OF WAR

Much doubt continued to exist in regard to the attitude of the Independent leaders on the question of the President remaining in office. Reuter's Correspondent at Chengtu in a message dated April 15 stated that he learnt on good authority that General Tsai Ao had expressed to General Chen Yi his willingness to agree that the President should retain office on condition that a responsible Cabinet was appointed and control of the Army given to the Cabinet. On the other hand the *Peking Gazette* reported on April 19 that General Chen Yi had sent a telegram to Vice-President Li Yuan-hung, Mr. Hsu Shih-chang and General Tuan Chi-jui in the following terms:—

"I beg humbly to report that I have delegated Liu Yi-ching and Lei P'ao to proceed to Yungning for the purpose of coming to a peaceful settlement on the basis of maintaining the present government. Reports have been received from my delegates, stating that in reply to our counter-demands, Tsai Ao states that Yunnan and Kueichow have telegraphed that they are not satisfied with article 1 providing for the continuance of the Great President in office. As to Kuangsi and Kuangtung, no reply has been received by Tsai Ao from these provinces owing to the interruption of the telegraphic service. Since the views of the opposing parties are so divergent, the prospect of a peaceful settlement is very remote. One shudders at the thought of our future. Chen Yi, being a man of little reputation, his words certainly carry no weight. It is therefore impossible for him to shoulder the great responsibility alone. Careful consideration has led him to the conclusion that the only solution is to get Kiangsu, Chekiang, Kiangsi, Hupeh, Hunan, and Shantung to take joint action for the purpose of actually and earnestly discussing with Yunnan, Kueichow and other provinces the question of a decision to settle the future. As the matter concerns the general situation as a whole, I beg that the Central Government should give this suggestion its support and appoint a central locality and at the same time issue telegraphic instructions to the Chiang Chuns and Governors of the provinces to send delegates to the conference. I further beg that general instructions be given in order that the question may be speedily settled. The situation is serious and every moment is precious. I respectfully beg that a decision be promptly made."

The same paper also reported that General Lu Yung-ting had sent a telegram, similarly addressed, in the name of himself;

Tang Chi-yao, Tutuh of Yunnan; General Tsai Ao; General Lung Chi-kuang, Tutuh of Kwangtung; Liu Hsien-shih, Tutuh of Kweichow, and Chang Min-chi, ex-Civil Governor of Kwangtung. This read as follows:—

"I have to acknowledge the receipt of three telegraphic communications which have reached me, contents of which I have persued with care and respect. Deeply struck by the sight of the dangers besetting the country and earnestly desirous of peace, you have expressed your views so forcibly that the words have stabbed my heart and have even reached my bones. Yun-ting may have little virtue but be assured that he cannot be insensitive to your appeal. I have delayed replying to your telegrams, because, the matter being of grave importance, I have had to consult and secure the views of Yunnan and Kueichow, who preceded me in the Righteous Movement, before a definite reply could be despatched to you. I am now in receipt of telegrams from the Tutuh of Yunnan and the Tutuh of Kueichow as well as from Tsai Sung-po [General Tsai Ao.] Substantially these telegrams state that Hsiang-cheng [the Chief Executive who is referred to by the name of his native district in Honan] has violated the provisions of the Provisional Constitution and thus he has invited war into our midst. As he has utterly disregarded his moral responsibility and therefore forfeited his dignity and honour besides abusing the trust of the country, the simple cancellation of the Imperial title is inadequate to satisfy in a perfect sense the expectation of the people and of foreigners so long as he clings to the desire to remain in his office of President. To persist in this desire can only increase the dangers of the country. However much we may wish to arrive at a compromise on the subject, we find that it is impossible for "this vital step" to be avoided. Yung-ting and others therefore humbly implore you to submit to Hsiang-cheng our request for his immediate retirement from the Presidential chair in accordance with the provisions of the Provisional Constitution so that Vice-President Li Yuan-hung may assume the authority of the State, issue orders for the cessation of hostilities, speedily convene Parliament and reform the internal administration. Our salvation from the destruction that is otherwise inevitable lies within this brief moment; and as Hsiang-cheng has avowed that he has no wish to convert the country into his private property, he surely will no longer hesitate to sacrifice the empty title of President for the sake of saving the people from the dangers of fire and water. A word from you. Gentlemen, will suffice to uphold the crumbling Heavens and in fear and trembling I await your orders."

At the moment of writing it is impossible to say whether this telegram is to be taken as a genuine expression of the views of the Independent leaders.

Quite a flurry was caused in the ranks of the Independents by the announcement early in April that a loan agreement had been signed in America by the Chinese Minister at Washington, Dr. Wellington Koo, and the banking firm of Lee, Higginson & Co., of Boston, New York and Chicago, the proceeds to go to the Central Government for the suppression of the so-called rebels. Lack of information caused many misleading statements to be published, among them being allegations that the loan was contracted upon most ruinous rates for the Government. As a matter of fact the loan was granted on terms of a surprisingly liberal character considering conditions in the outer world as well as in China, and that money was available to China at 6% with an issue price to the public of 97% secured on Treasury Notes, is the highest testimony to the excellent credit of the country—testimony which the Independents as well as the Government should be pleased to see tendered at this time. The loan was to have been an advance of \$5,000,000 United States currency in connexion with an Industrial Loan which had been under discussion, but the full amount was not issued. A sum of \$1,000,000 gold was transferred by the Bankers after the Mandate cancelling the Monarchy had been published, but as Kwangtung declared independence several days later and it was thus seen that the trouble in the country had not been settled by the cancellation the Bankers withheld any further advance.

The Independents in Shanghai, however, did what they could to emphasise their objections to the loan, and a telegram was sent to the American Minister in Peking, as well as to the State Department, Washington, on their behalf by Mr. Tang Shao-yi, one-time Premier, declaring that they would not recognise the agreement as valid. The protest came after the Bankers themselves had decided not to make the full advance, so virtually the warning was unnecessary.

The Central Government found finances becoming increasingly and tighter as April drew to a close, and the most serious problem confronting them was the one of money. Further

advances from the salt revenue could not be looked for, provincial contributions were scarcely to be expected, and other avenues to capital seemed to be closed to them, placing the Exchequer in dire straits.

JAPANESE LOAN FOR MANCHURIA

To provide funds for the construction of the projected railways (53½ miles) between Ssuning-kia, a station between Mukden and Changchun, on the South Manchuria Railway, and Chengchiatun, in Eastern Inner Mongolia—the agreement for which was recently signed with the Yokohama Specie Bank—a loan of Yen 5,000,000 was floated in Japan between April 7 and 10. The Yokohama Specie Bank announced the particulars regarding the loan, which bears interest at 5 per cent. per annum and was issued at 86.50 per cent. The term of the loan is 30 years, the bonds to be redeemed by drawings after standing unredeemed for ten years. The railway, and the receipts from the railway, constitute the security for the loan. Japanese accountants and engineers will be employed, and all receipts from the railway when constructed will be lodged with the Yokohama Specie Bank.

SESAMUM GROWING IN INDIA

According to a forecast based upon reports received from provinces which contain on an average 78 per cent of the entire area under sesamum in British India, the total area so far reported for the present season is 3,167,000 acres as against 3,509,000 acres (revised figures) at this time last year, or a decrease of 10 per cent.

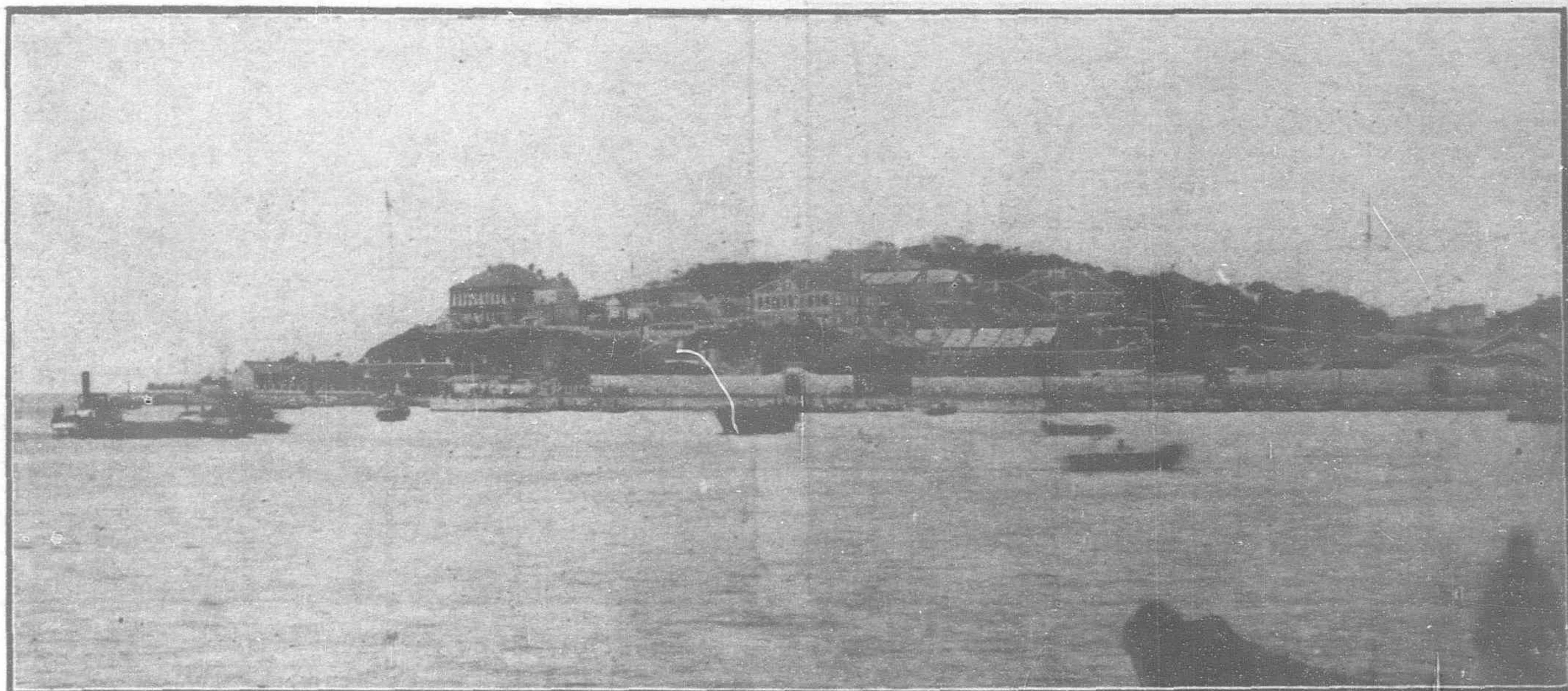
The crop was seriously damaged in early growth by heavy rain and floods in the eastern parts of the United Provinces and in parts of North Bihar, and by deficient rain in the western parts of the United Provinces, in the northern parts of the Bombay Presidency, and on unirrigated lands in the Punjab. The present condition of the crop is reported to be generally from fair to good.

MINING SUPPLIES IN CHosen

The former provision of the Chosen customs tariff allowing the free admission in reasonable quantities of machinery, apparatus, explosives, and chemicals imported by mining companies for use in gold, silver, and copper mining has been extended by an order including the free admission of all these articles, as well as basic crude ores to be used as solvents, when imported by refiners.

TURN TO CHINESE INDIGO

The price of artificial indigo in Hongkong has so far advanced, and that of the native Chinese indigo has so far declined, that the prices are practically the same at present, the result being that the Chinese turn to the use of the native dye because of its fast quality and particularly rich hue. English dye exporters are not making quotations for this market. Previous to the war, the trade was largely among German firms and with German dyes, but placed with the trade through British traveling men.



CHEFOO CITY—SHOWING PRESENT OPEN ROADSTEAD

IMPROVING CHEFOO HARBOUR

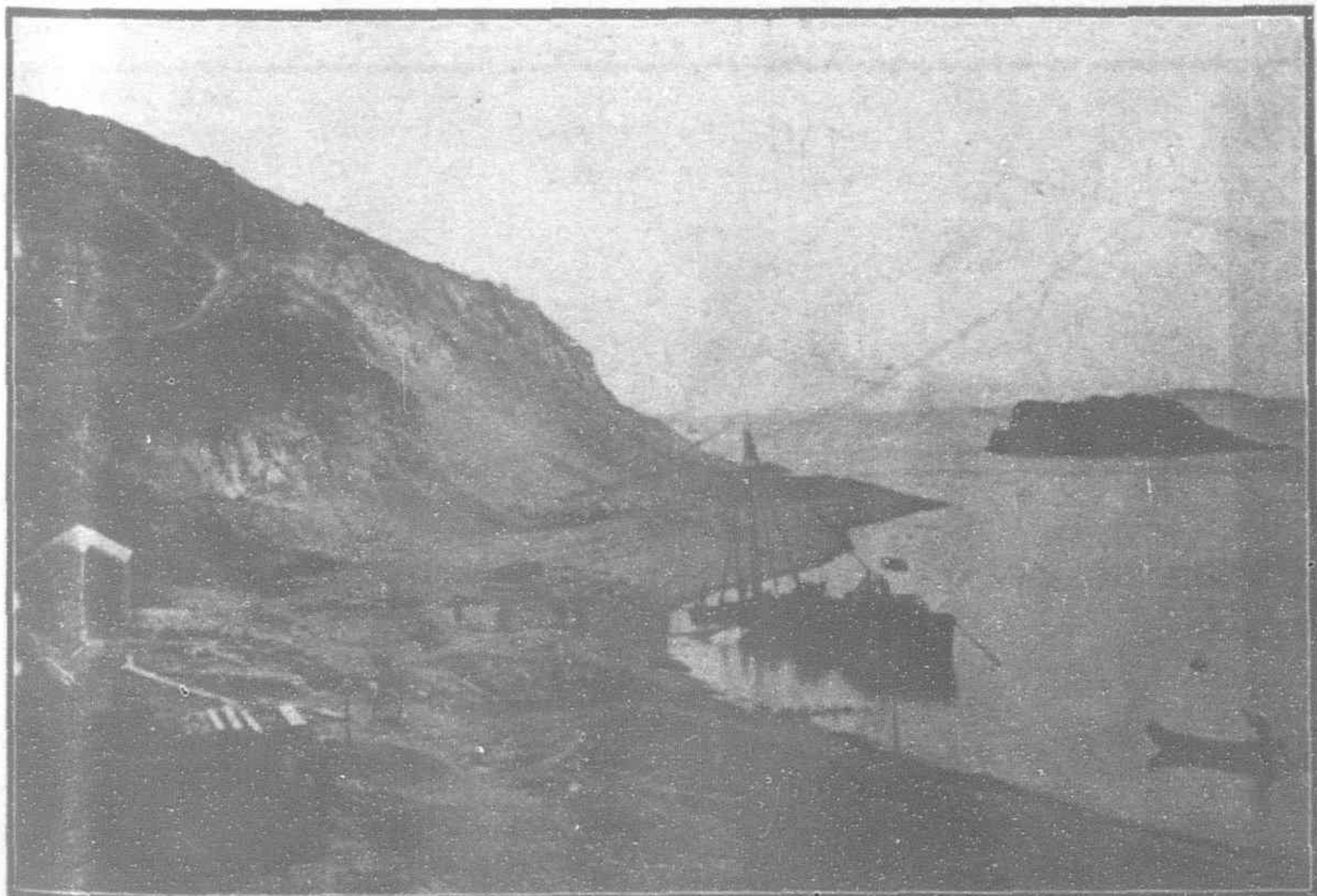
Construction of a Breakwater and Mole.

One of the most important engineering works which the Chinese Government is at present proceeding with is the improvement of the Chefoo Harbour. Lying as Chefoo does on the south coast of the Gulf of Chihli, and being exposed to the full force of the Northeastern storms, the harbour is anything but safe, and far from convenient, even in normal times. The anchorage being exposed to the prevailing winds the movement of cargo is always attended with difficulty, due to the fact that vessels must anchor in the open roadstead, without any direct connection with the shore and without any accommodation for the transportation of cargo to and from the interior. The loading, discharging and transportation of cargo between ship and shore can only be effected by cargo boats, with an average capacity of 15 tons, worked by coolies in fair weather. When gales prevail the movement of cargo is rendered impossible, causing considerable loss to shipping and merchants. To remove these disabilities and provide means for the proper handling of products from the interior, such as silks, fruits,

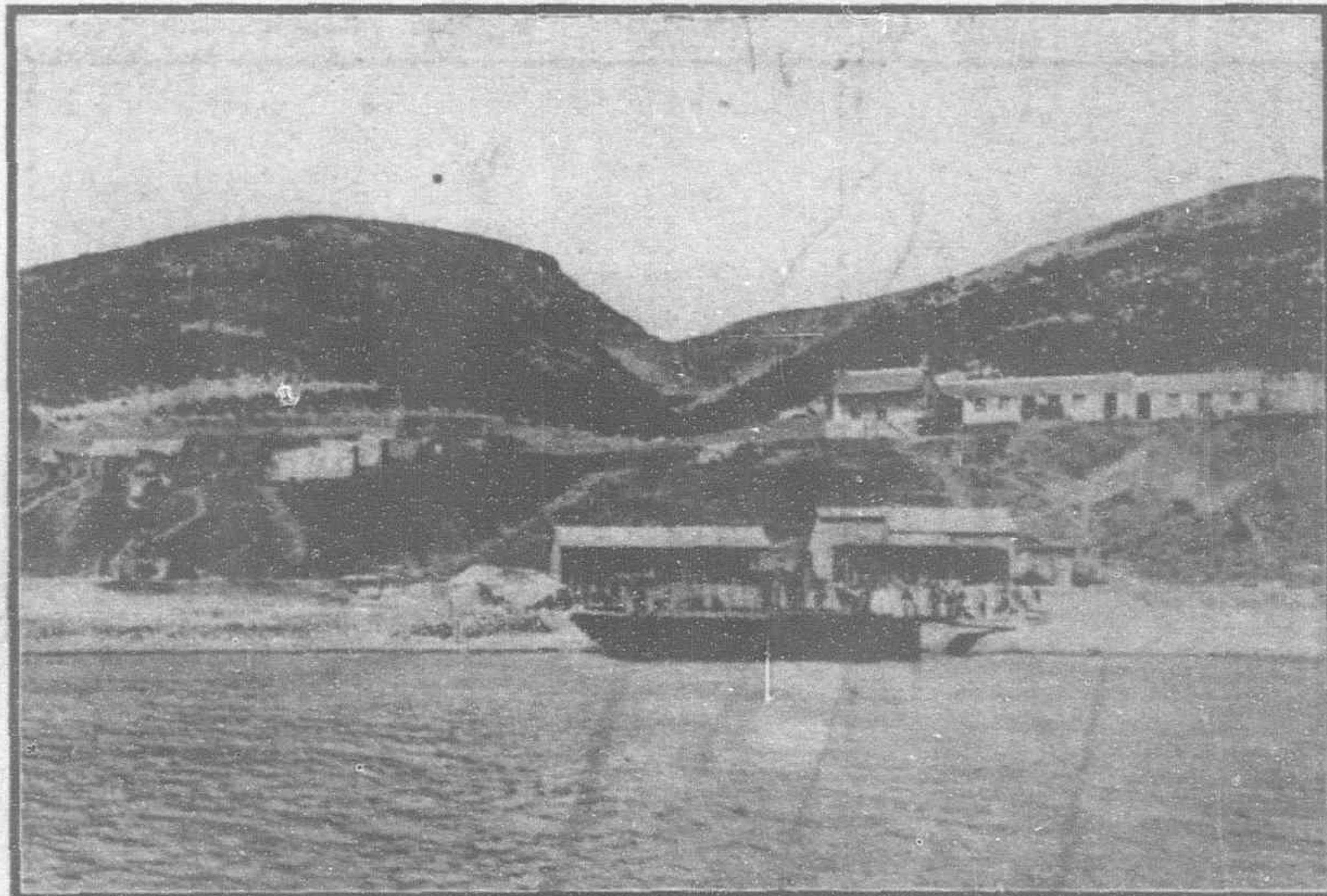
farm produce, etc., a scheme for harbour improvement has been adopted and is now well under way.

The importance of Chefoo has developed gradually since its opening as a treaty port in 1862. It was then a mere fishing village, but expansion of trade has caused it to become one of the chief ports of call for steamers plying between Tientsin and Shanghai. It also became the centre for the embarkation of Shantung emigrant coolies for Manchuria and Siberia, where they go to seek employment. The average number per year who thus set out in the spring and return in the autumn is 100,000, though large numbers remain in various parts of the country as permanent settlers.

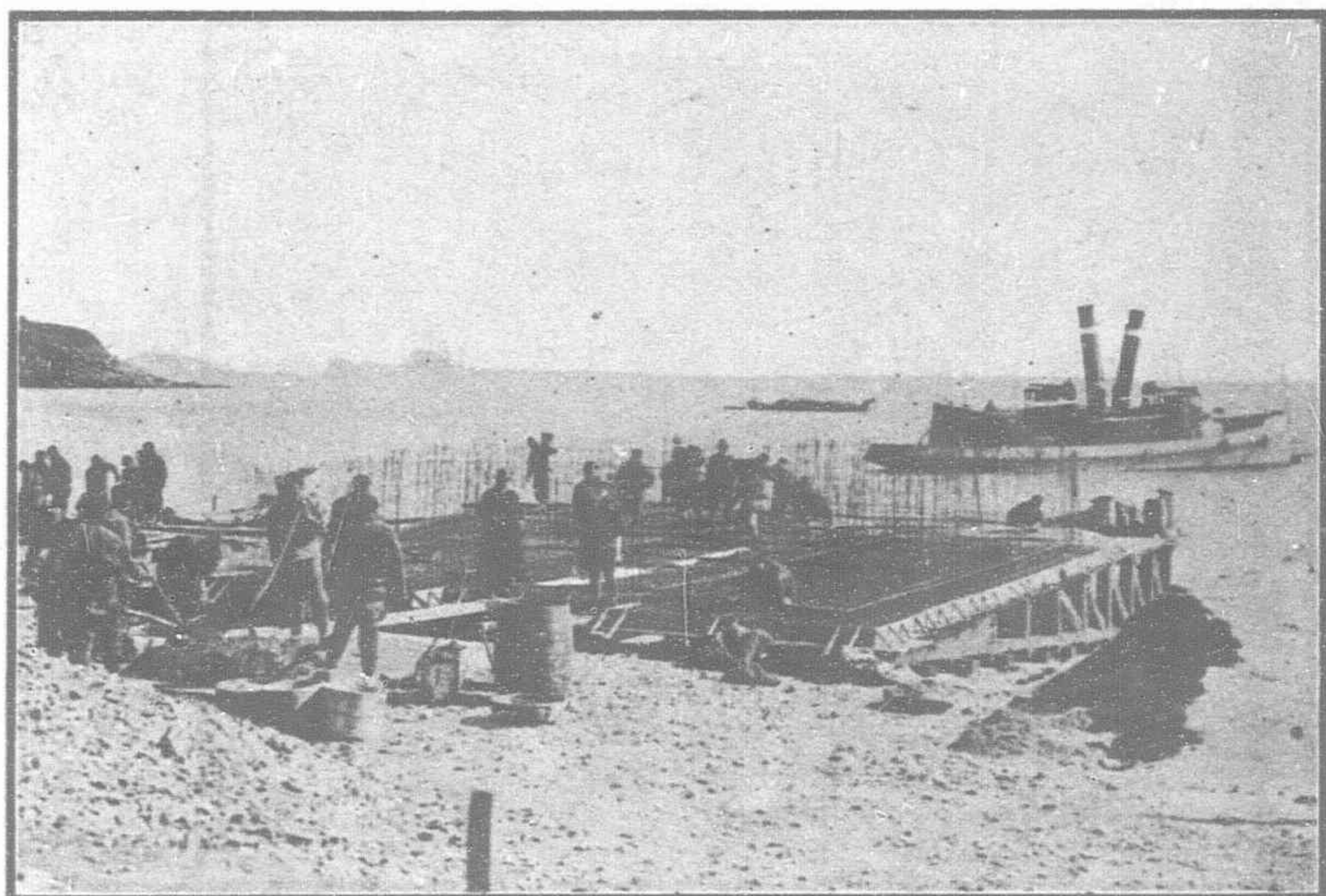
During recent years Chefoo has suffered greatly by the competition of Tsingtao, which is connected with the capital of the province and with Tientsin by rail. Agitations have long been afoot for railway connection between the interior of the province and Chefoo, but chiefly owing to lack of capital no plan has materialized. Trade consequently failed to expand



PILEDRIVER PREPARING FOUNDATION FOR SLIP FOR THE REINFORCED CONCRETE CAISSON—POWDER MAGAZINE ON ISLAND AT RIGHT



SLIP ON WHICH REINFORCED CONCRETE CAISSON IS BEING BUILT—COOLIE QUARTERS AND WAREHOUSES SHOWN IN BACKGROUND

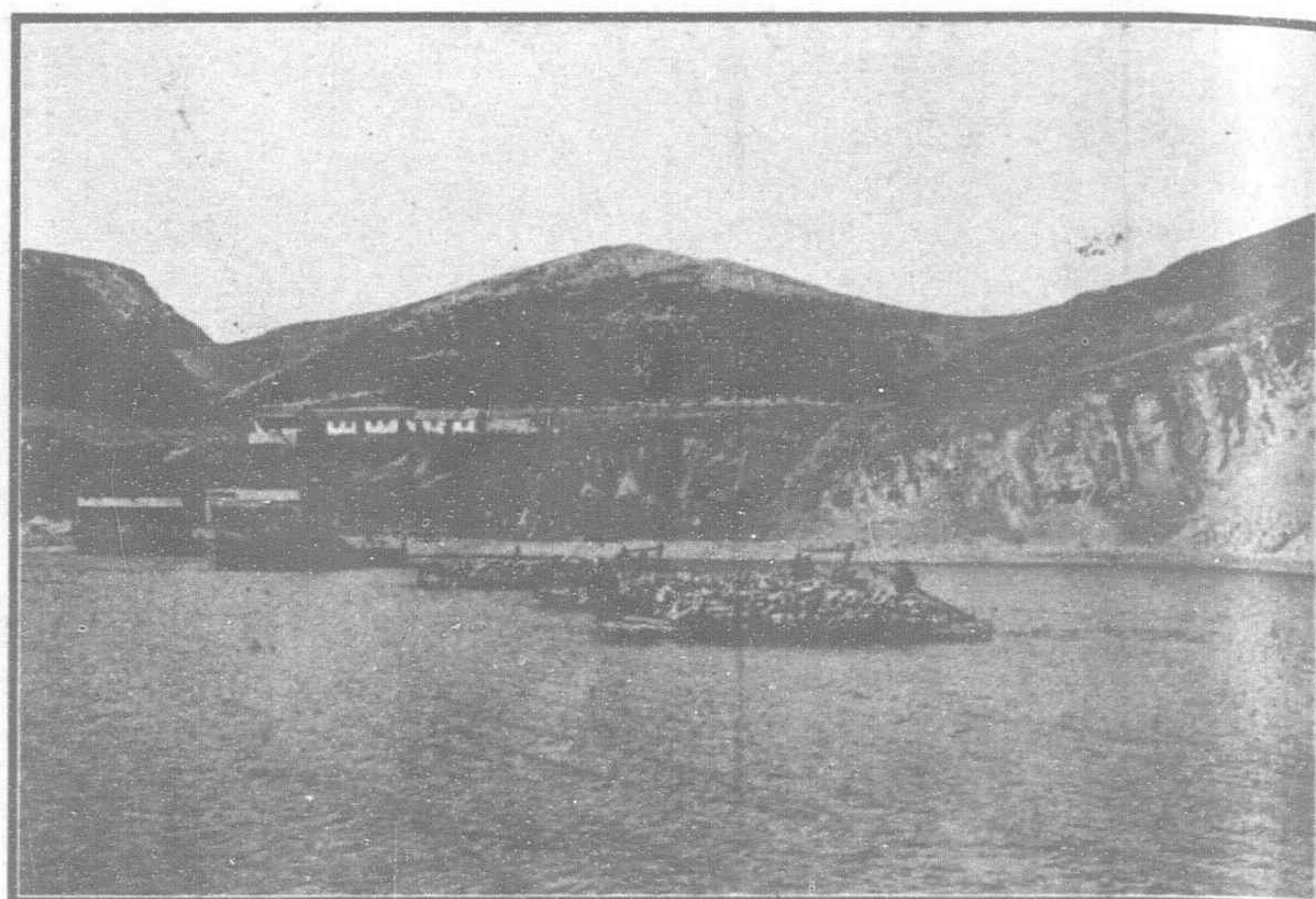


CONSTRUCTION OF REINFORCED CONCRETE CAISSON TO FORM HEAD OF BREAKWATER

along lines natural to it but despite this it totalled in 1912 Taels 34,400,583, consisting of Taels 21,536,852 in imports and Taels 12,863,731 in exports.

As the only essentially Chinese port worth developing on the north coast, and as the only one capable of competing with the port of Tsingtao, which was built up by the Germans and is now held by Japan, Chefoo has much to commend it to the consideration of the Government of China, and the regrettable feature is that the responsible authorities have been so long in recognizing the necessity of providing the facilities that should exist for shipping in an up-to-date harbour. Tsingtao, which is 200 miles south of Chefoo, has shown steady and remarkable progress both in shipping and trade—progress which must be attributed principally to the excellent modern accommodation offered. Tsingtao has its breakwaters, wharves and railway, and its prosperity proves the incalculable influence of the three essentials. The pity of it is that the Chinese have been so slow to recognize that their own port of Chefoo has suffered tremendously as a result of the rise of Tsingtao. Ships preferring a safe harbour—with facilities for handling cargo—to the open unprotected roadstead of Chefoo, with its primitive methods of lighterage, went more and more to Tsingtao, and as a result the products of the interior were attracted in increasing volume to this centre to the consequent loss of Chefoo.

Whether the belated efforts now being made will enable Chefoo to recover its trade or not remains to be seen, but the natural vitality of the vicinity will, it is hoped, justify the expectations of those who have so long agitated for improvements, and whose wishes are now beginning to materialize.



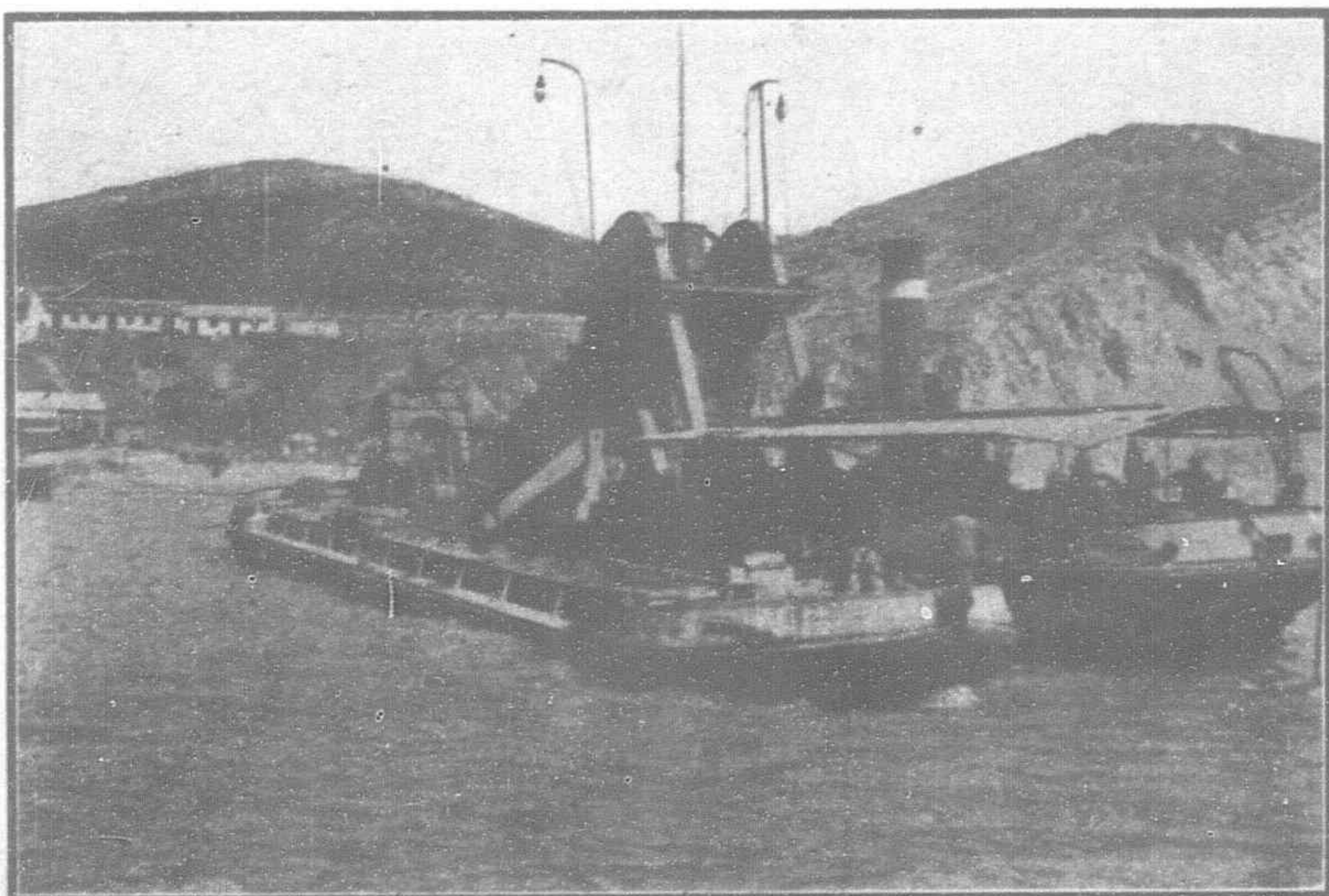
STONE QUARRIES ON THE BLUFF—STONEBOATS AND TUG PLACING STONE IN POSITION

In 1910 the Works Department of the Maritime Customs prepared a scheme for harbour improvement. This was one of several projects, but it provided the idea which has been embodied in the present plans, which were put into execution in 1913 under the aegis of the Chefoo Harbour Improvement Commission. This body was formally created to supervise the improvement work and consists of the Superintendent of Customs as Chairman, a representative of the Consular Body (the Senior Consul being nominated), the Commissioner of Customs (ex-officio treasurer), and the Chairman for the time being of the Foreign and Chinese Chambers of Commerce.

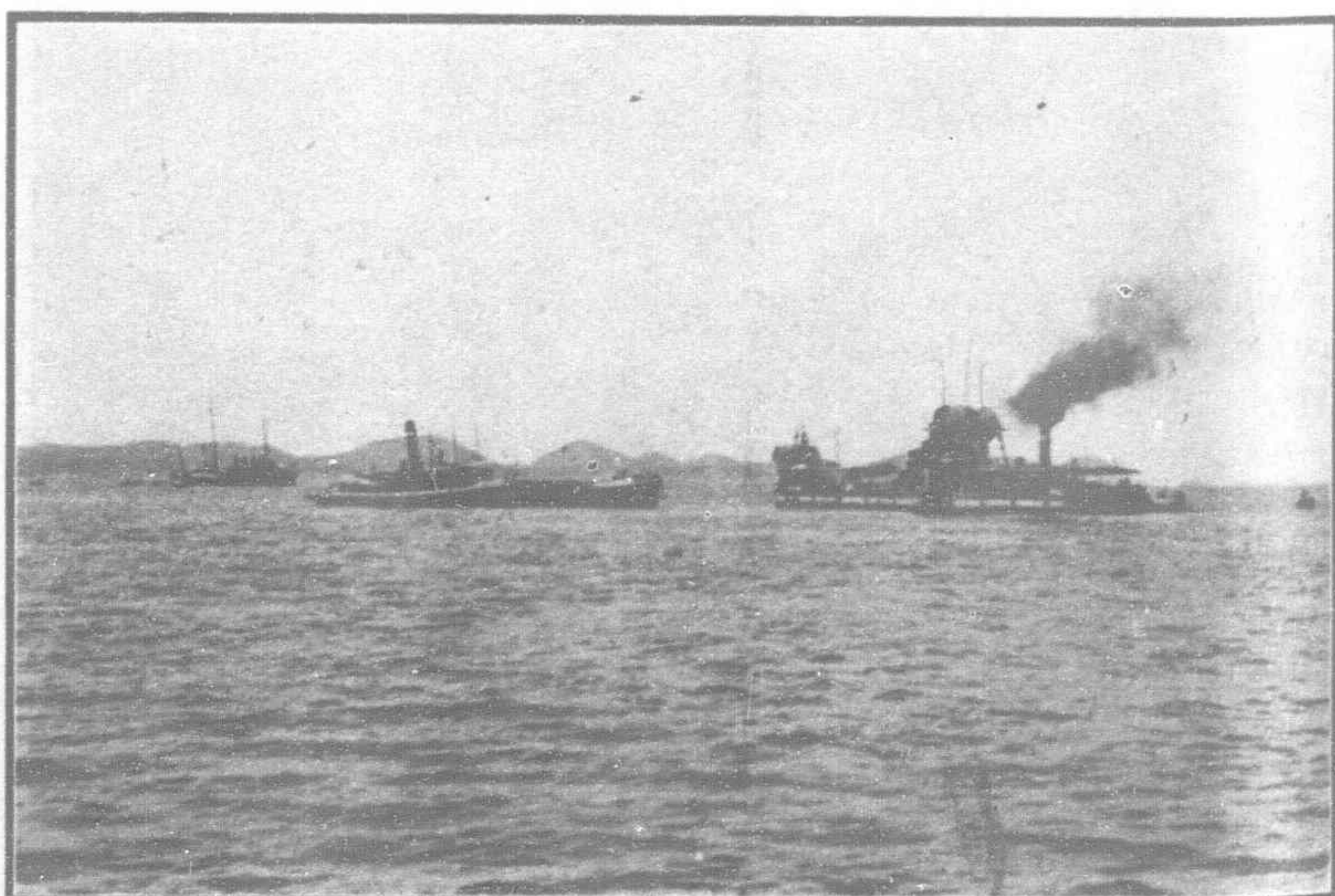
To cover the cost of construction a tariff of surtaxes was put into operation from July, 1913, under instructions from Peking.

Through the courtesy of the Government of the Netherlands, their Engineer, Mr. O. C. A. van Lidth de Jeude, C.E., was permitted to go to Chefoo to advise the Commission, on their request, as to the best means of providing the port with the protection it requires. Accompanied by Mr. B. van Exeter, C.E., he arrived in October, 1913, studied thoroughly the harbour conditions, and presented final plans in May, 1914. These plans were approved by the Commission, and by the high authorities; in July, 1914, a loan for the necessary funds was guaranteed by the Minister of Finance, and negotiations therefor were authorised.

Owing to the war, execution of the work and financial arrangements were postponed until the Commission, convinced of the urgent necessity to carry out the scheme, decided to call for tenders before May 31, 1915.



THE BUCKET DREDGE WITH A SELF-DISCHARGING BARGE ALONGSIDE



THE BAY OF CHEFOO—SHOWING DREDGER, TUGBOAT AND BARGE

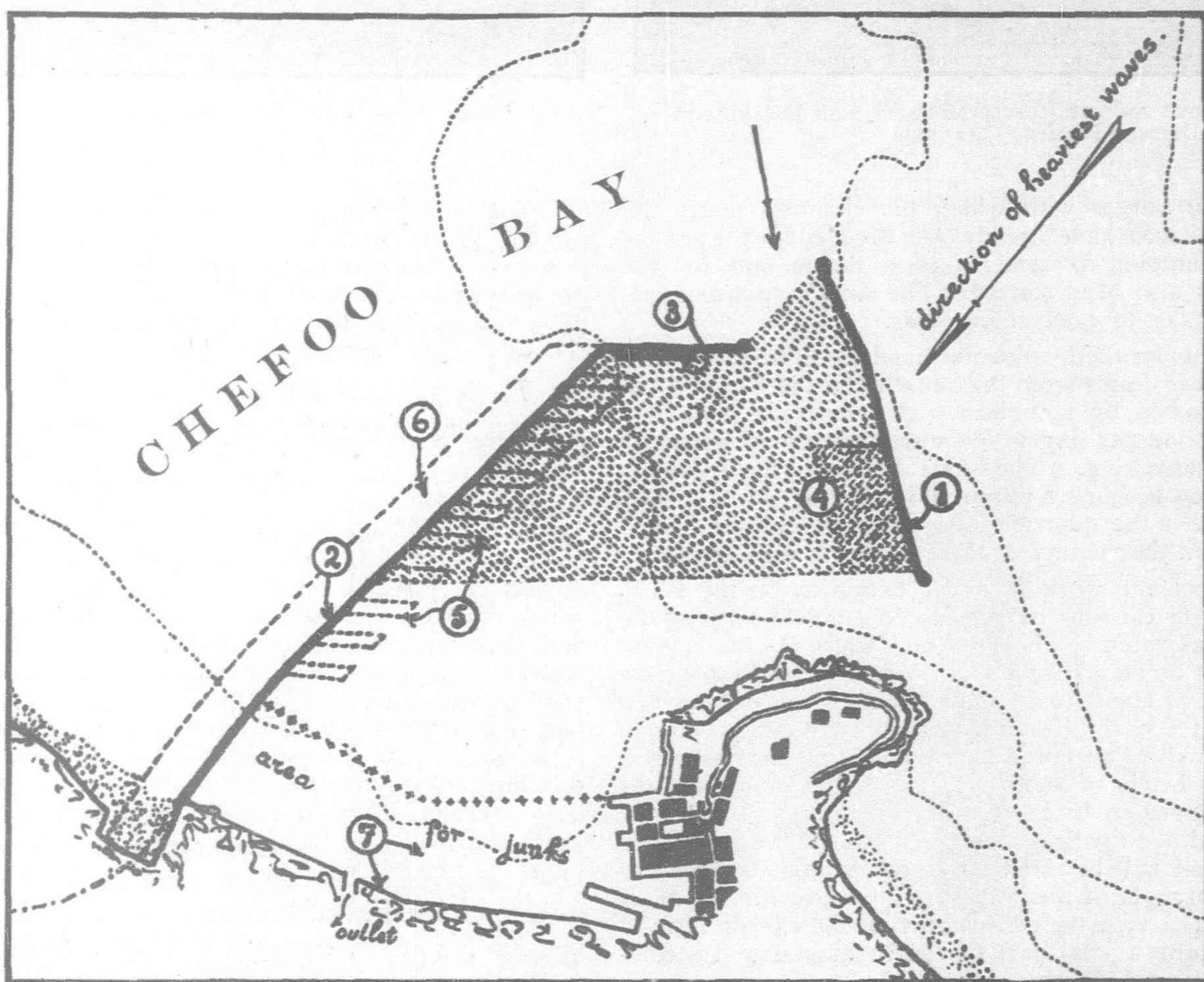
The offer of the Netherlands Harbour Works at Amsterdam was accepted and the contract, amounting to Haikwan Taels 2,677,000, was signed on June 9, 1915, actual work being started in the beginning of August, 1915.

The works to be executed consist of an eastern breakwater, a western mole, with quaywall, and dredging in the shelter formed by the breakwater and mole; these works to be completed in four years.

The breakwater, situated off Tower Hill, with a length of 2,600 ft., will protect the harbour, preventing the heavy north-eastern waves entering from the open sea.

The mole, giving further protection against the north-western waves, will be connected with the shore (and so with the future railway). On the northern part a quaywall will be projected 600 ft. where vessels can come alongside. The total length of the mole will be about 6,000 ft.

The eastern breakwater will consist of a foundation of rubble stone whereupon a wall of masonry in cement mortar will rest, with a caisson of reinforced concrete at each end. Before the rubble is dumped a channel to receive this stone will be dredged to about 32 ft. below low water. The dredged material, being soft mud, is transported to sea. Upon the outer berm of this rubble foundation blocks of masonry, weighing about 4 tons, are to be deposited in regular rows to protect the rubble from being washed away by the waves breaking against the quaywall. The wall to be erected upon the rubble mound, will consist of blocks of masonry for the lower part, supported at both ends by the caissons as mentioned and of monoliths built in situ for the upper part. The blocks and caissons will be prepared on shore and be deposited in a bed of broken stone, to be flattened by divers. The blocks will be placed in sloping bond showing in cross-section, three rows: the outside row built up by three



PROPOSED MOLE AND BREAKWATER AT CHEFOO

WORKS TO BE EXECUTED AT PRESENT: (1) Breakwater (2) Mole with (3) Quay-wall. (4) Dredging, darkly dotted area to 25 feet, lightly dotted area to 20 feet.

WORKS TO BE EXECUTED IN FUTURE: (5) Lateral piers. (6) Quay for tracks and godowns. (7) Improvement of existing works.

SCALE: About four inches to the mile.

The main entrance of the shelter will be formed between the northern heads of the mole and the breakwater with a width of 450 ft. between foundations, and will be sheltered by the overlapping end of the breakwater.

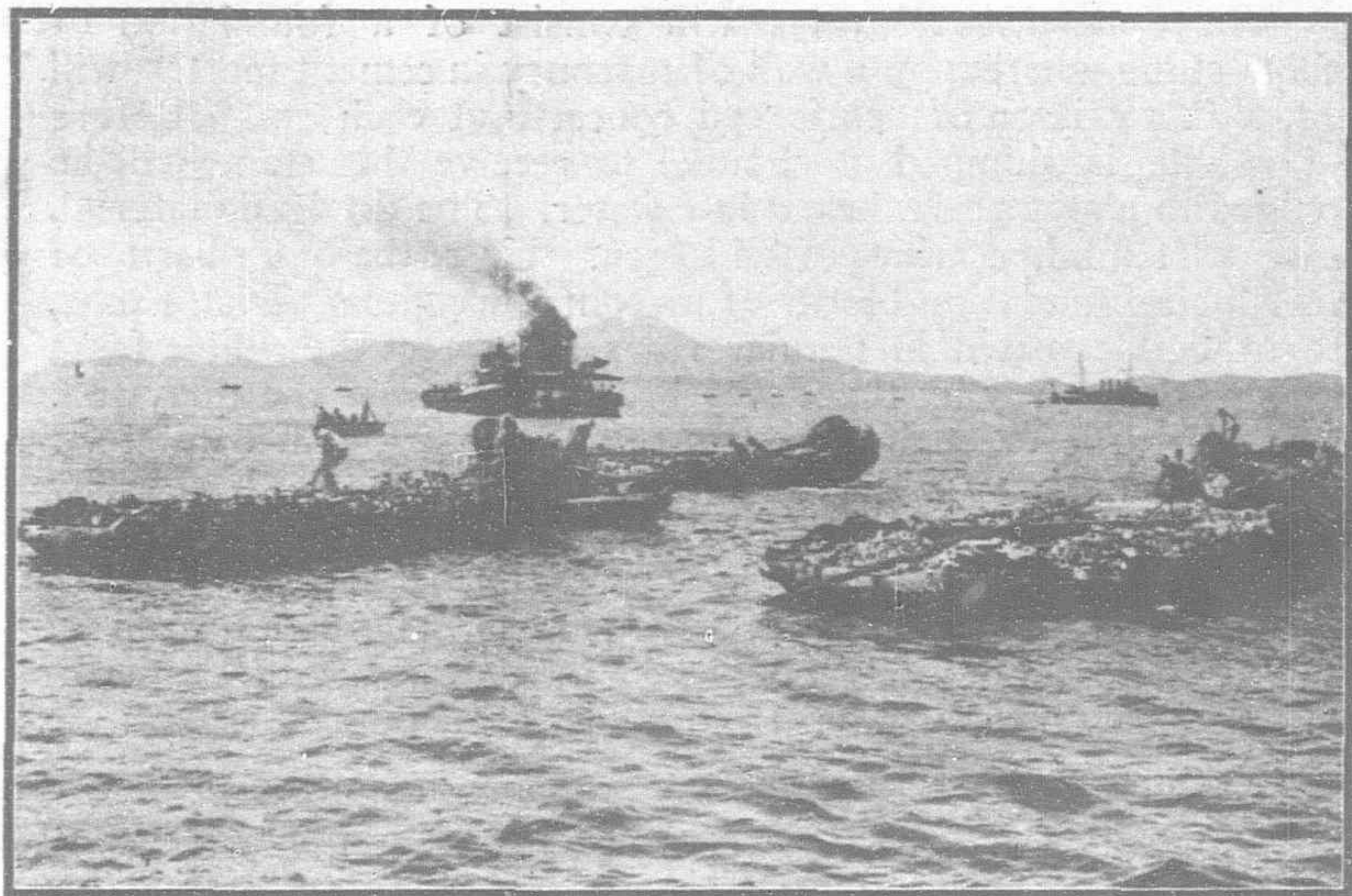
A sufficient depth for shipping within the shelter will be formed by dredging about 22 ft. below low water over an area of about 100 acres.

An area of 450 to 900 ft. is to be dredged to a depth of about 27 ft. below low water, offering an anchorage to ocean going steamers visiting the port. The area for anchorage may be increased to meet future expansions, the western mole offering the opportunity to construct wharves by building out lateral piers when required. The mole can also be enlarged to the west by reclamation, thereby forming a sufficient area for sheds and railway tracks, so that cargo may be transhipped directly from the steamers into the wagons and the sheds.

blocks, the inner row by four blocks. The monoliths will be surmounted by a parapet on the seaward side.

The western mole will consist of a mound of sand covered by clay, brushwood and stone, surmounted by a parapet of masonry. Before the sand is dumped a channel will be dredged in the mud bottom under the inner slope of the mound to reach the sand bottom. The lower slopes, the berms and the bottom under the toe of the outer slope, will be protected by mattresses of brushwood, covered with rubble. Upon the crown rails will be laid. The quaywall on the northern part of the mole will be of similar construction as described for the wall of the eastern breakwater and will be provided with fenders, ladders and bollards.

It is evident that for works of this magnitude many preparations must be made, and a big plant and machinery are required. The dredging plant consists of one bucket dredger, two powerful

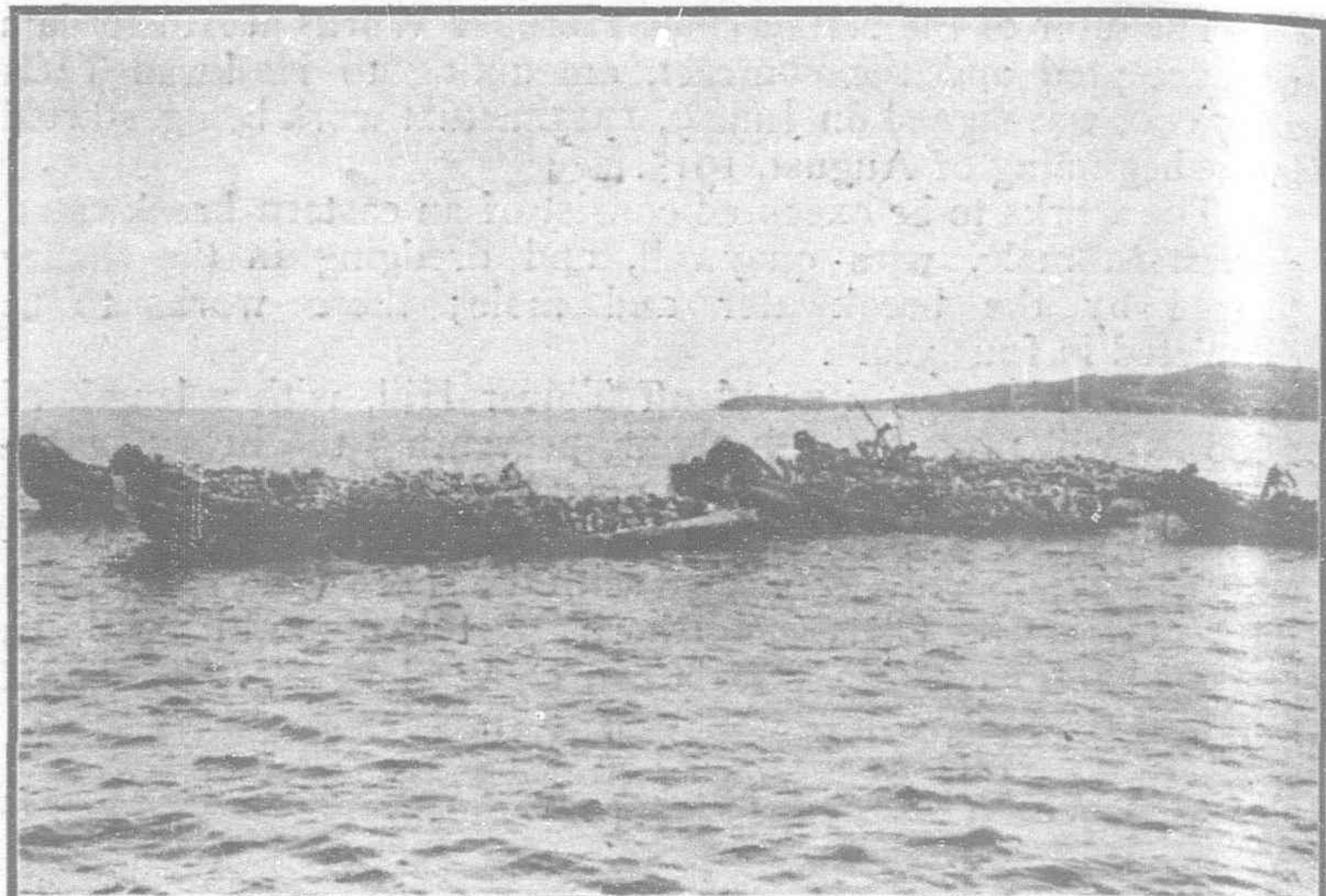


JUNKS CARRYING STONE FOR THE RUBBLE MOUND UNDER BREAKWATER
—DREDGER FORMING CHANNEL

tugboats and four barges with which the channels under the breakwater and the mole have already been dredged for the greater part; while the dumping of sand to form the mound for the western mole has also been started. The daily output amounts in average from 3,000 to 4,000 cubic yards.

The channel under the breakwater has been filled partly with stone, transported in junks from the quarries on the Bluff to the dumping place, towed by a tugboat. A quantity of about 800 to 1000 tons of stone per day is to be transported in about 40 junks, weather permitting. The stone is blasted by dynamite, from 500 to 800 coolies being required for boring, blasting and carrying the stone in the quarries. A village of coolie quarters has been created in the vicinity of the quarries in consequence.

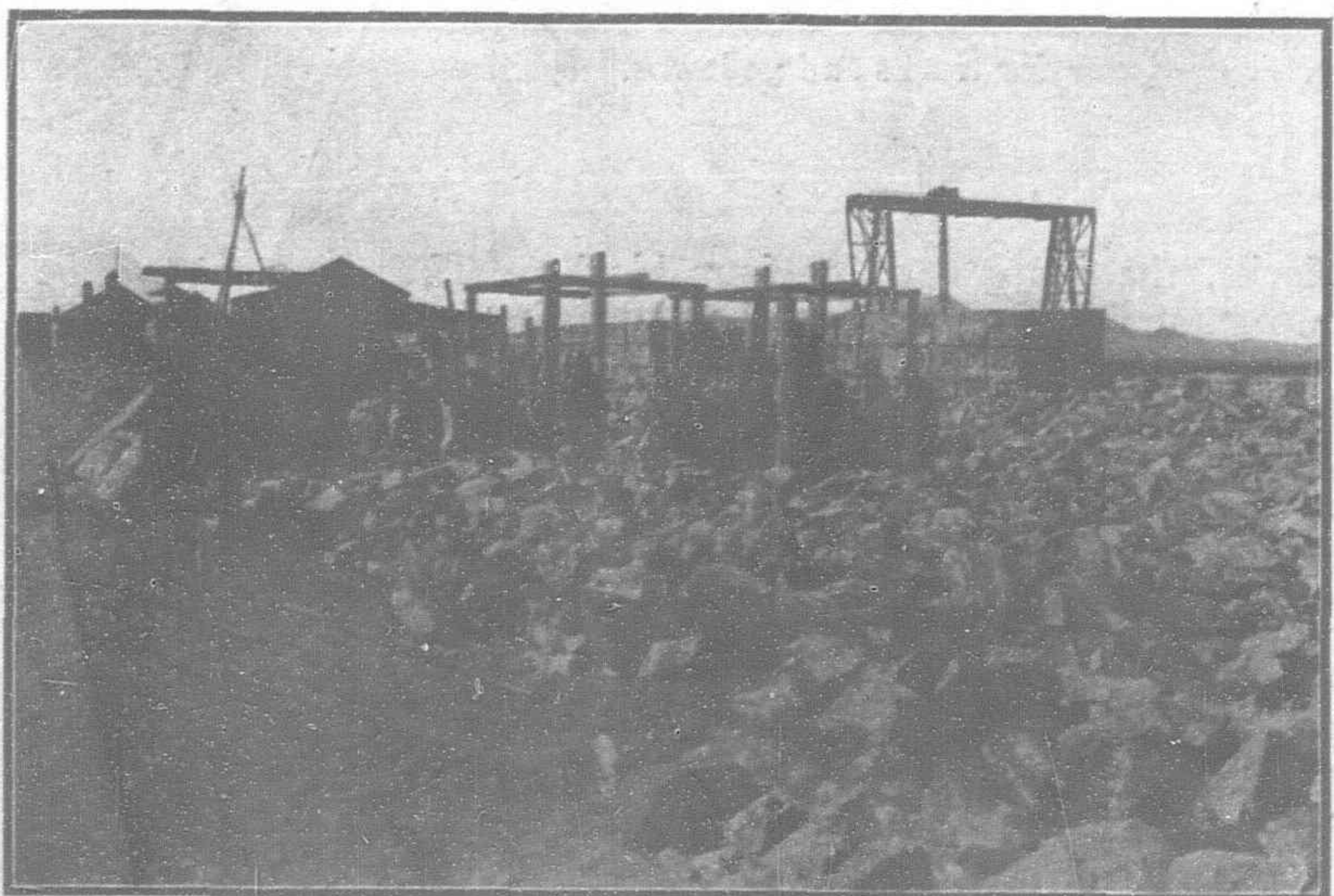
Another important work is under execution on the Bluff, namely, one of the caissons of reinforced concrete forming the heads of the breakwater. The floor and walls of this caisson are carefully built up on a strong slip. When the walls are completed to a height of about 10 ft. above the floor the caisson will be launched into the water, towed by a tugboat to a safe place in the bay where it will be anchored. While floating the walls will be built up over a height of another 15 ft. When completed the caisson will be towed to its place in the breakwater, sunk in the exact position and filled with concrete. The total weight of this caisson when filled will be about 2,500 tons so that there will be no risk that the strength of the waves will remove it. From an engineering point of view the construction of the caisson is most interesting and forms a vital part of the breakwater. Its completion will take several months.



JUNKS DISCHARGING STONE ALONG THE SITE OF THE EASTERN
BREAKWATER

The principal preparatory works on shore are being executed on the West Beach where an extensive blockyard has been prepared for the manufacture of all blocks for the breakwater and the quaywall. The smaller blocks of 4 tons, of which 5000 are to be made, have been under construction since the autumn of last year; 1500 have been completed.

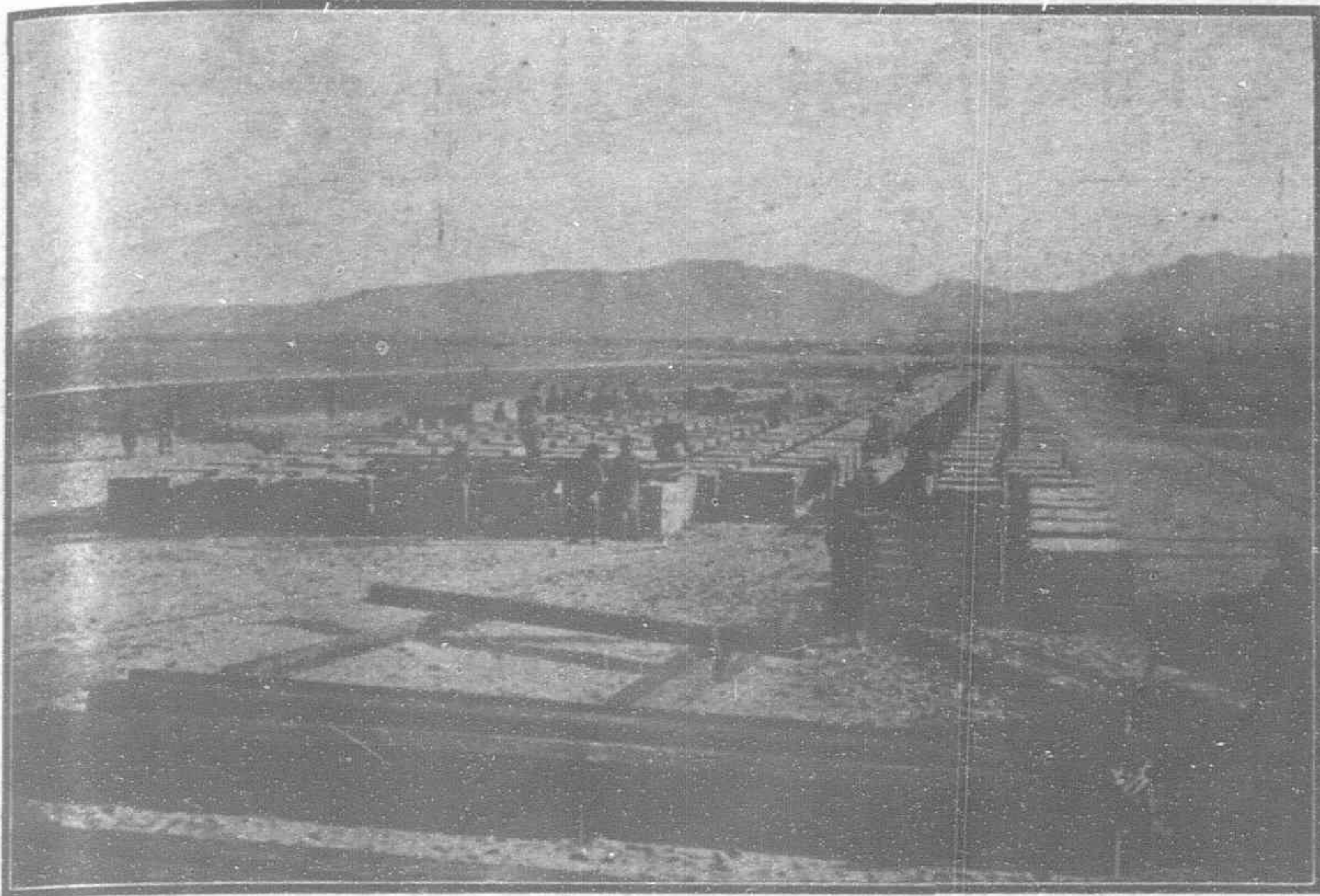
The large blocks forming the walls of the breakwater and quaywall have a maximum weight of about 33 tons. About 4600 are to be made, work being started in the spring of this year. The blocks are being placed in regular rows and over the full length of the blockyard heavy rails have been laid on a solid foundation of concrete to carry a travelling crane to lift the blocks and to put them upon blocktrucks. These blocktrucks have to carry the blocks to a blockjetty, made on the shore, upon which a powerful crane with gear lifts the blocks from the trucks and puts them on lighters which are to be towed to the breakwater. A floating crane lifts them into the water in the right position which is controlled by divers. It is evident that for the handling of these heavy weights extremely powerful machinery is required. At the end of the blockyard godowns, workshops, dwelling house, carpenter shop, coalyard and water supply have been erected. The godown for cement contains 3,000 to 5,000 casks, the godown for stores contains steelware, rope, etc., all kinds of articles and spare parts in large quantities. The workshops are divided in two parts, one for the blacksmiths and one for the fitters, equipped with all necessary machinery and tools.



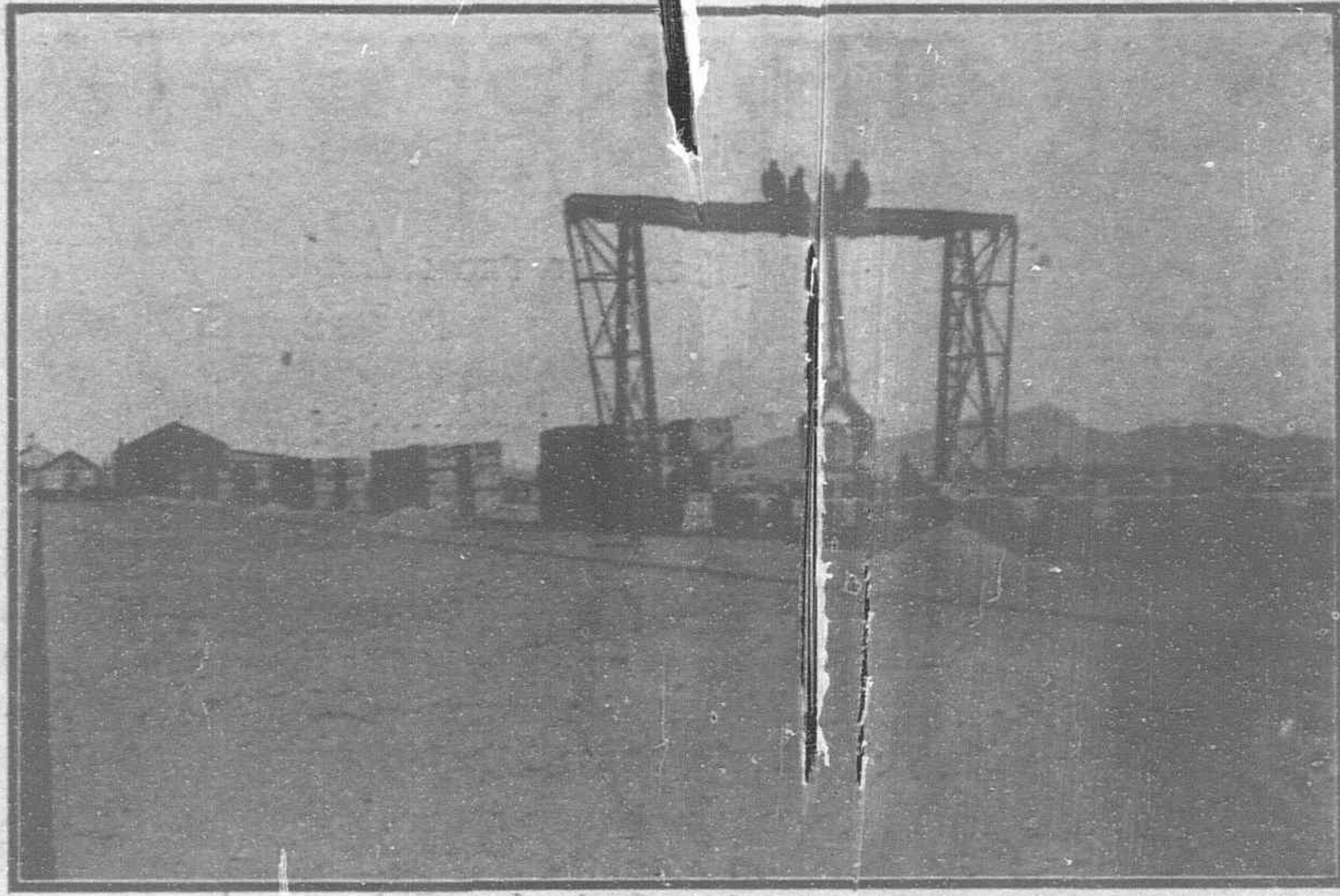
BLOCKYARD AT THE WEST BEACH—SHOWING BLOCKS OF 32 TONS
UNDER CONSTRUCTION



CARPENTER SHOP AND GODOWN—TRAVELLING CRANE FOR LARGE
BLOCKS UNDER CONSTRUCTION



CONCRETE BLOCKYARD ON WEST BEACH—SHOWING CONSTRUCTION OF SMALL BLOCKS

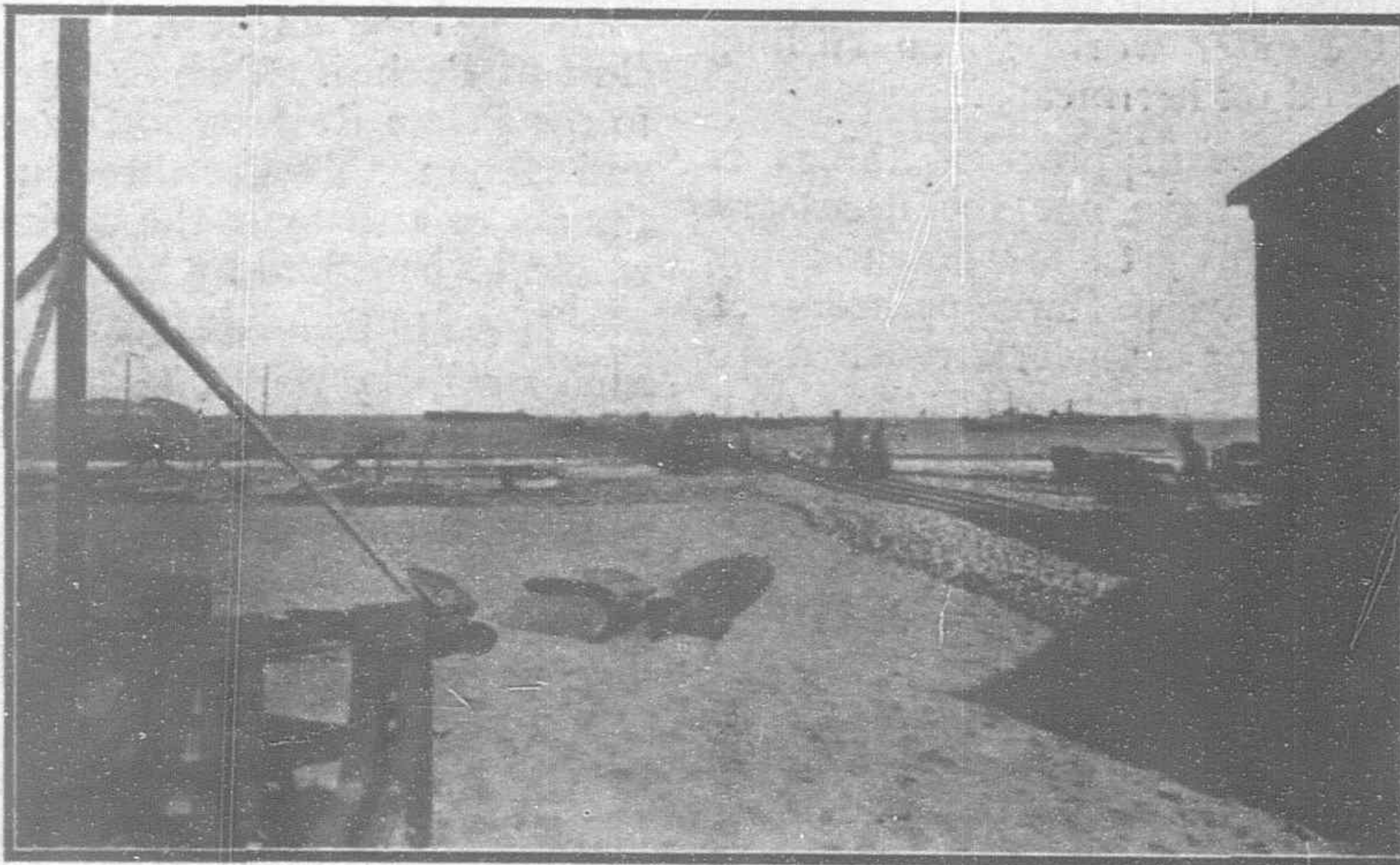


TRAVELLING CRANE LIFTING SMALL CONCRETE BLOCKS ON THE WEST BEACH

The coalyard has a capacity for at least 4000 tons and is connected by a small railway with a jetty on the beach. This jetty has a length of over 1000 feet, and the water at the end of the jetty offers a sufficient depth for the tugboats. A double track has been laid on the jetty which is used daily for discharging and transporting cement, coal, stores, etc.

In the vicinity of these installations the mattresses of brushwood are prepared on the beach. About 250,000 bundles of brushwood have already been stored there and this quantity is gradually increasing, the total consumption being over 2,000,000 bundles. The mattresses—so-called "zinkstukken"—being a special Dutch work, are made on the beach to be floated, and at high water are towed to their place at the site of the western

Since the building of this breakwater, mole and quay wall, together with the dredging operations, will convert Chefoo from an open roadstead into one of the safest and most convenient harbors on the coast of China, the mercantile community, not only foreign, but Chinese, is preparing for much greater volume of shipments than in the past, and, according to frequent notices in the Chinese Press, the Chefoo-Weihsien Railway project must soon become an actuality instead of as now, an indefinite prospect. The hinterland of this portion of Shantung province is exceedingly rich in agricultural products and proper shipping facilities are expected to lead to great extensions of cultivated land.



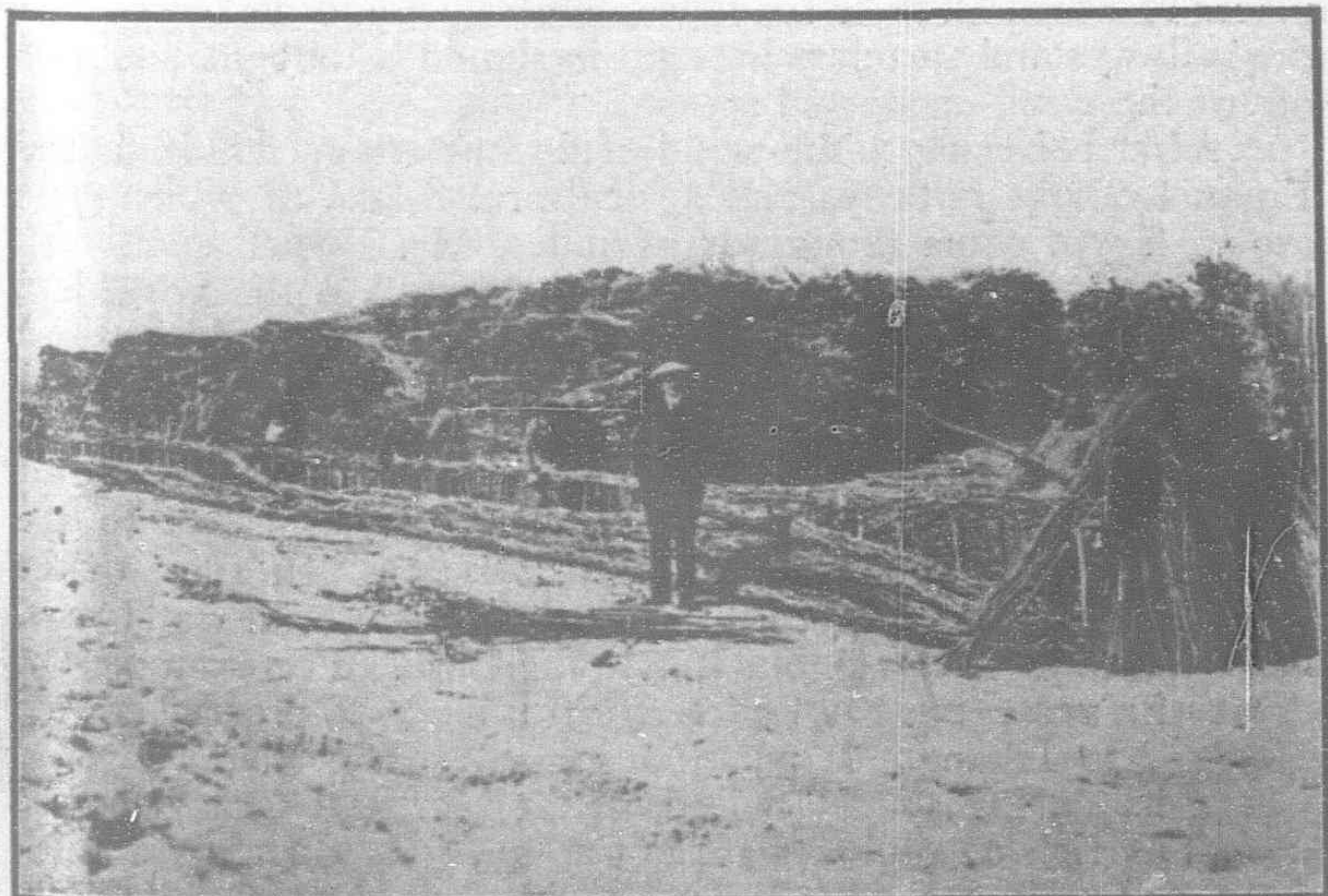
JETTY ON WEST BEACH LOOKING TOWARD BAY

mole, where they are sunk in the right position by ballasting with stones.

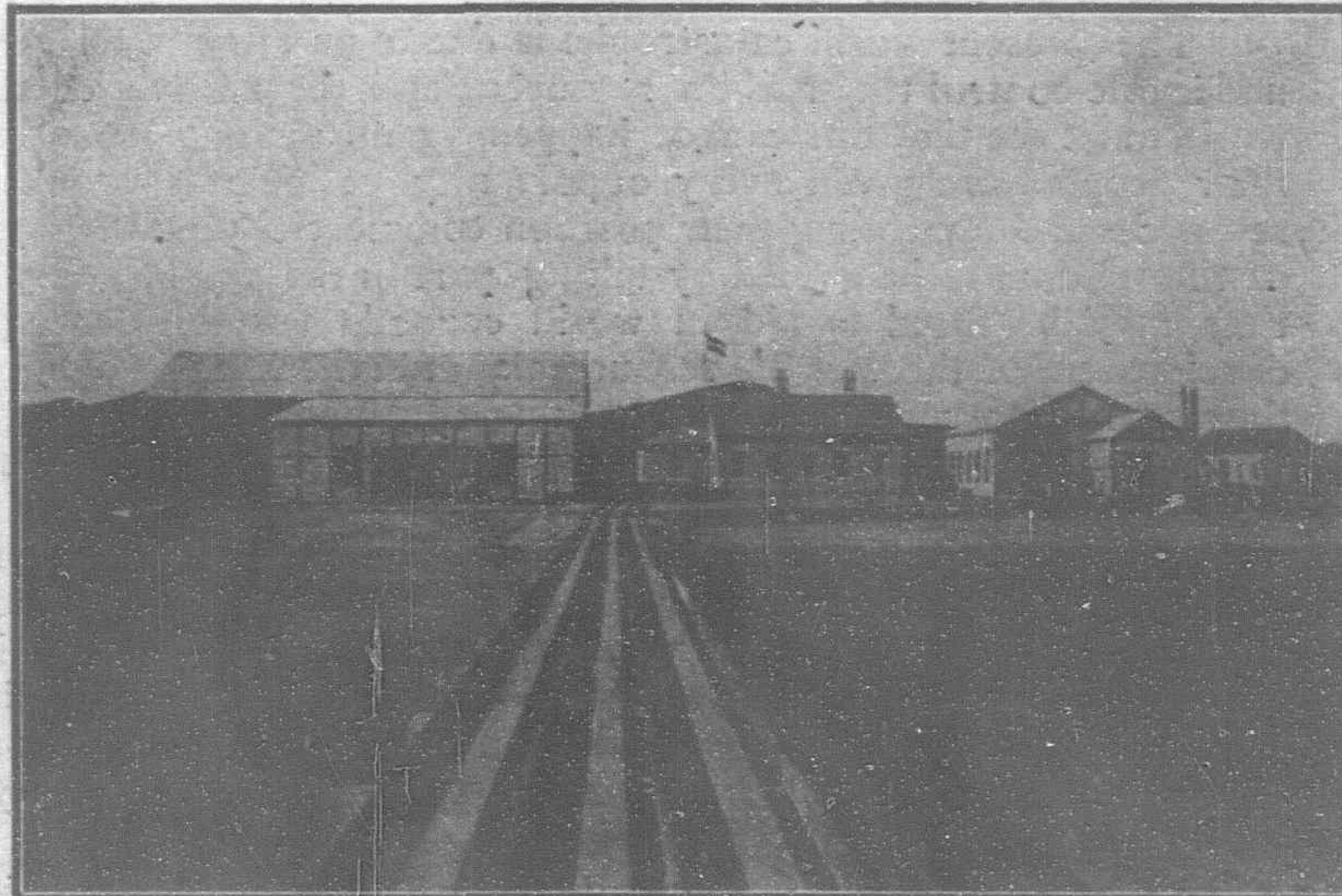
To carry out the various works on the west beach a large crowd of coolies is required, and the aspect at present is that of an ant heap. The works on the beach are under the supervision of the superintendent, who lives on the spot.

Up to now operations have been carried on at full speed and activity will increase when, within a few weeks, the suction dredger, tugboats, barges, pile-drivers and floating crane will have arrived to complete the plant already present.

The works are managed by a technical and a financial manager, two or three civil engineers, and a further foreign staff of eleven members.



BUNDLES OF BRUSHWOOD STORED ON WEST BEACH—COOLIES PREPARING THE WOOD FOR THE MATTRESSES



LANDWARD VIEW OF JETTY—SHOWING GODOWNS, WORKSHOP AND DWELLINGS ON THE WEST BEACH

TRANSPORTATION IN CHINA

[EXTRACT FROM ADDRESS BY MR. SIDNEY J. POWELL, A.M.I.C.E., F.R.G.S.,
BEFORE THE ENGINEERING SOCIETY OF CHINA]

China is full of heart-breaking instances of waste of power and misdirected energy, which, under an honest and really patriotic administration, could be turned by engineers into channels of national content and wealth. When one has actually seen what has been done in countries like Egypt and India by railways and improved waterways, in bringing contentment and well-being to the inhabitants, to turn to China and see her infinitely superior resources running to waste makes one despair.

The world now is too much everyman's land for China to stand out. Transportation facilities have opened the whole world up to universal trade. It is for China to do her own developing. If she does not do it herself, it will be done for her.

While there is yet time, let her do it herself by honest administration of funds for the country's welfare; if not, she will lose inevitably those "sovereign rights" of which she is so tenacious, but which she has no right to retain if she does nothing to deserve them. It is modern justice, and modern justice will prevail.

No country in the world, calling itself a civilized country, has such poor means of transportation as China, and this is the result of China's attitude in the past towards Western nations. Whilst the West has been for the last two centuries hurrying up the passage of people and merchandise from point to point, China has stood aloof, content to let the outer world go on rushing about while she drowsed on and lived on her means.

To get paying results a knowledge of practical things is absolutely necessary and the Chinese have not the necessary technical knowledge, or, rather, do not as yet know how to apply that knowledge. The Chinese have very few engineers at present, but they have a great respect for engineers, much more so than for commercial men, whom they can beat at their own game. They realise that technical men know something and apply their knowledge in a way which, in its results, is startling to a people who have been used for so many centuries to getting about on foot or in wheelbarrows and to grinding their corn and weaving their cloth by hand power.

There have arisen in China many enlightened Chinese who know now that it is the duty of their nation to take their place in the world in endeavoring to improve the lot of the struggling agriculturist and merchant who have been handicapped so much by the lack of means of getting the result of their labors on to a market. A nation which takes no pains to improve the lot of its inhabitants is doomed to extinction nowadays. They must all come in or go under.

The present world catastrophe is due to an attempt to bring under one control the world's resources and the nations of the world must see that this cannot happen again, making sure that their peoples are given every opportunity of developing their resources and improving their position commercially, so that, out of the wisdom to be gained by taking part in the world's trade, they may be fitted to aid in world councils for the peaceful development of the world's resources and, in the unity of opinion thus gained, prevent any upstart taking advantage of the world's confidence. The only protection against war is a healthy and prosperous population. China is a very long way behind in the question of the amelioration of the masses, the sufferings of some of her population are intense. The industrious poor in Europe have opportunities for betterment provided for them—those in China hardly any, and the way to provide for the betterment of the masses is to provide them with cheap and speedy transportation. This can be effected by railways and improvement of waterways for boat traffic.

After referring to the number of utilities created by railways, the production of raw material and the concentration of finished goods which they make possible, Mr. Powell pointed

out that the railway systems at present working in China covered a mileage of over 4,000 miles and there were some thousands of miles under construction or projected. Some of these existing railways had been built at great cost and were over-capitalized, largely owing to the ridiculously high cost of obtaining permission to build them and this, whilst an evil and tending to arrest development, had its bright side in proving that railways in China are paying concerns despite adverse financial conditions. If they were not, there would not be such a scramble to get and pay for concessions to build them.

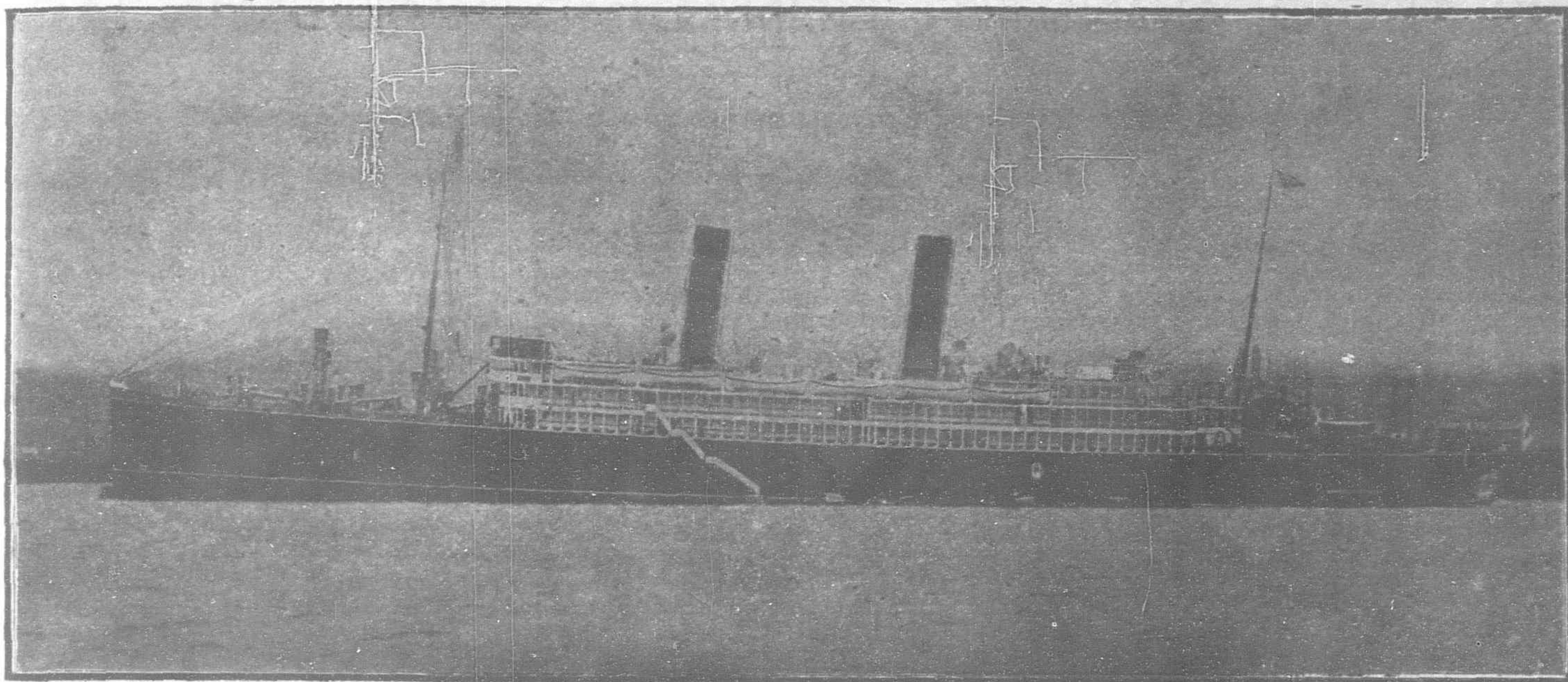
Mr. Powell then proceeded to speak of a number of rich districts which might greatly be benefited by having narrow gauge railways built as feeders to the existing regular (4 feet 8½ inch) gauge railways or to the waterways. These narrow gauge feeder railways only cost from £800 to £1,000 per mile as against about £10,000 per mile for the broader gauge road and the light gauge road could carry, if worked up to its fullest efficiency, as much traffic as any railway in China was at present carrying. When the light railways began to approach their full carrying capacity they could be converted into wide gauge roads, and the latter given double tracks.

He advocated two or three such railways connecting the rich pastoral district north of the Great Wall in Chihli, to feed the Chinese Government Railway which runs along the coast of the Gulf of Pechili. Two or three in Northern Shansi, connecting to the Pehan Railway in Shansi and the main trunk line in Chihli and Honan. Two or three in Southern Shensi, connecting with the above railway at the capital Sianfu. Every province in fact would be benefited by having these inexpensive railways.

It could be an excellent object lesson for the rest of China if such a railway were built from Wuhu to Shanghai. This railway could bring most of the down river traffic into Shanghai, cutting off the roundabout route via Chinkiang—avoiding the dangerous passage through the quicksands at the Lanshan Crossing and the navigation and heavy pilotage charges up the Whangpoo to Shanghai. Such a railway would effect a saving of at least two days in the down journey from Hankow.

Another instance of the lack of economy in transportation in China, the lecturer said, was the way in which cargo was handled at Shanghai, Tientsin, Hankow, etc., especially in respect of the amount that went backwards and forwards over the foreshore when sold to an up-country buyer. The remedy was that the railways should be connected to the wharves and should have large areas with bonded godowns and open storage places to which all their roads would connect and the cargo that the railways and steamers brought in should be bought and sold out of these rail-connected areas.

After referring to the wonderful work achieved in India and Egypt by light railways and agricultural roads, of which there are in Egypt some thousands of miles, Mr. Powell dealt with water transportation; and, in passing, referred to the possibility of installing hydro-turbines in the Yangtze Gorges, which would furnish power for operating locks and supplying cheap power for railways in central China; such works being combined with locking facilities on the river itself, thereby removing the great navigation dangers and opening up a great waterway to the richest province in China, namely Szechuan. In spite of the natural advantages enjoyed by China in the matter of waterways, there were intolerable limitations to their use. For example, the draft of a vessel must not exceed 6 ft. if it was to proceed beyond Hankow to Ichang. It must not exceed 2 ft. if it was to get to Changsha during several months of the year, and Changsha was almost as rich a trade centre as Canton, it is certainly a much finer city. Numerous other instances were quoted, pointing to neglect of opportunities which if taken might prove of inestimable advantage.



THE PALATIAL TOYO KISEN KAISHA LINER CHIYO MARU SHORTLY BEFORE HER UNTIMELY END ON THE ROCKS OFF HONGKONG

THE WRECK OF THE CHIYO MARU

The Chiyo Maru, one of the three big T.K.K. liners, carrying 229 passengers, went aground on the rocks of Lema Island, eighteen miles off Hongkong, in a dense fog at 4.30 a.m. on March 31, and despite efforts of a fleet of salvage vessels has broken in two and has been abandoned. It was seen at once that the vessel was badly damaged, as her oil tanks were punctured by the rocks. The weather conditions prevailing made salvage seem an impossibility but hope was not given up until the vessel's back broke in two, six days later.

The Chiyo was on the way from Manila to Hongkong and apparently was somewhat ahead of her schedule time. The route which she was taking as she neared Hongkong is a new one used since the beginning of the war and is by way of Lion Pass instead of the Green Island channel on the other side of Lema Island. The fog prevented seeing any distance ahead and the liner crashed into a ledge of rocks on the south side of the island.

Passengers who were among the last to leave the ship and who had time after the first fright of shipwreck had passed, to examine the vessel's location, say their escape was almost miraculous as the liner struck a narrow ledge of rocks on which she wedged fast. Ten yards to either side and her bow would have crumpled up against precipitous cliffs with more than 50 fathoms of water at their base. The boat ran sixty feet over the ledge of rocks, which is an indication that she was going at a fairly good speed.

The passengers were asleep at the time of the shock. A wireless message asking for aid was sent out at once and the British destroyer Whiting came immediately. Most of the passengers were transferred to the destroyer at once, as far as is known here, and they were immediately taken to Hongkong. While press report gave credit to the passengers for courage, some of those who were lowered in boats soon after the accident saw they had need of fortitude as their boat hung against the side of the ship for more than an hour while the crew tried to fit the rudder and the overlocks.

The Chiyo was in command of Captain Bent, for many years a skipper in the T.K.K. service, who was on his second

voyage with the boat. He succeeded the late Captain Greene who was recently transferred to the Tenyo. Although Captain Bent has made in public a statement regarding the cause of the accident, some of the shareholders of the T.K.K. stated they were inclined to blame Captain Bent as despite a dense fog and the difficulty of the approach to Hongkong, the steamer was running at the speed of 14 knots an hour. Passengers stated that the Captain had given orders that he must be called immediately if any fog were encountered, and that the ship was kept at high speed by the Japanese officer in charge despite the fog and the difficulty of the new passage into the harbour. The vessel was five miles off her course.

The Chiyo Maru was a triple-screw turbine steamer of 22,000 tons, the same in type as the Shinyo Maru and the Tenyo Maru. She was built in 1908 by the Mitsubishi Dockyard and Engine Works at Nagasaki and was made to conform with Lloyd's requirements and the regulations of the Japanese government. Her maximum speed was 21.6 knots an hour.

With the Chiyo out of service the T.K.K. will suffer much financial loss and many passengers planning to cross the Pacific will be occasioned much delay. The shortage of vessels for both freight and passenger traffic on the Pacific is keenly felt just now. The statistics given in the report of the T.K.K. at its recent general meeting show that the profits of one voyage to America and return for a vessel of the type of the Chiyo is approximately 350,000 yen. There was a large list of passengers to be taken on at Hongkong and about forty passengers had engaged passage at Yokohama. This means that the Chiyo would have carried a capacity passenger list with four or five persons to the cabin. Passage across the Pacific just now is not easy to get and space in the larger liners is now practically reserved far into July. The disaster to the Chiyo will tend to make the situation worse.

Of the 4,800,000 yen, the original cost of the vessel, 3,351,000 yen has been paid. The insurance upon the vessel is reported to be 3,950,000 yen, of which 3,150,000 yen is on the hull and engines and 800,000 yen on her equipment. The companies concerned are the Tokyo Marine and Lloyds.

25 YEARS OF CONSTITUTIONAL IMPERIALISM IN JAPAN

[ADDRESS BY PROFESSOR E. W. CLEMENT BEFORE THE ASIATIC SOCIETY OF JAPAN]

Readers must not expect to find in the Japanese political system such popular rights and privileges as they enjoy, or such as the English enjoy, under a constitutional monarchy. It must be remembered that the Japanese Constitution was framed principally from German models, as best suited to the conditions in Japan at that time. The American Republic and the British Empire were too radical in their political constitutions to be followed by a nation emerging from centuries of feudalism and absolute imperialism. The modifications of imperialism could not be too extreme or too sudden but must be slight and gradual. The people, as a whole, must be educated up to the point where they could understand and appreciate, not only political rights and privileges, but also political duties and responsibilities. Fukuzawa, the great commoner of Japan, once wrote as follows: "Owing to the peculiar customs which have for so long existed, we are not at all sensitive about our privileges and our rights." The Japanese people needed to be gradually educated up to an appreciation of popular rights and duties. Thus the Constitution was to be, in a sense, the school-master to lead them to constitutionalism.

The Imperial Prerogative

The sovereignty of the Emperor is the fundamental principle of the Japanese Constitution. Article I reads as follows:

The Empire of Japan shall be reigned over and governed by a line of Emperors unbroken for ages eternal.

The late Prince Ito, the chief compiler of the Constitution, in his "Commentaries on the Constitution of the Empire of Japan," says of this article: "It is meant that the Emperor on his Throne combines in himself the sovereignty of the State and the government of the country and of his subjects."

The "divine right of kings" was carried to such an extreme in England that Charles I. lost his head; but, in Japan, the "divine right of the Emperor" is acknowledged to a degree of which no Stuart ever even dreamed. Ueyehara, in his "Political Development of Japan" sets forth that very vividly and asserts that the Emperor of Japan can use "more effectively than Louis XV" the latter's famous expression "L'état c'est moi."

It is really unthinkable that any Japanese Emperor could ever suffer the fate of Charles I. of England. It was this idea of Imperial sanctity that made people discredit at first the report of the anarchist conspiracy of 1910. It must, however, be acknowledged that even the Emperor is not always exempt from being the subject of discussion. And yet, on the whole, he is generally considered sacred, so that attempts to drag him into politics are resented. An apparent attempt to utilize an Imperial Rescript by the new young Emperor for partisan purposes is believed to have ruined Katsura's last ministry in 1913. And the failure of Saionji at that time to make the Seiyukai yield to what was said to be the Imperial desire in that case is thought to have compelled him to give up the leadership of that party and retire to private life.

Dr. McLaren, in a lecture before the Asiatic Society of Japan, spoke as follows on this point:

"The tremendous prestige of the Imperial name had been used continually for the defense of the government. . . . The divine descent of the Monarch had been made to bear the whole burden of the oligarchical form of government. . . . The oligarchy and the monarchy had been merged into a single governing power, which continued to exist through the reverence of the people for the Throne."

This idea of the sacredness of the Imperial name has given rise to some ridiculous in-

stances of so-called *lèse majesté*. For instance, the Ministry was censured in 1893 "for its carelessness in maintaining the dignity of the Crown." What happened was that an English lawyer, counsel for the Japanese government, in a case before the English consular court at Yokohama, merely used the name of the Emperor in his plea!

There is one peculiar constitutional provision which requires special notice under this topic of "The Imperial Prerogative." The Constitution cannot be amended unless a project to that effect is submitted by Imperial Order to the Imperial Diet. Then, in neither House can an amendment be debated unless two-thirds of its members are present, and no amendment can be passed unless two-thirds of the members present approve (Article LXXIII). Ito explains why the Diet cannot initiate an amendment by saying that "the right of making amendments to the Constitution must belong to the Emperor himself, as he is the sole author of it." But, just as the late Emperor, now known as Meiji Tenno, granted the Constitution in response to a desire or a demand, so doubtless any prudent Emperor will heed public opinion with reference to amendments.

It may be said, in general, concerning the Imperial authority in Japan, that, while nominally and theoretically it is not limited, yet practically it is somewhat limited. Ueyehara says:—

"Neither custom nor law, written or unwritten, nor the Constitution limits his ultimate sovereign power. He is the Supreme Lord and Absolute Master of the Empire."

Yet the Emperor does not interfere in the actual administration of affairs; he reigns but he does not rule. The late Emperor took a deep personal interest in the affairs of State, but never showed the slightest desire to exercise "personal rule." It is, therefore, not difficult for an Emperor, unless he is a man of strong personality, to be at the same time an "absolute monarch" and an absolute figure-head. That was often the case in old Japan; and it is not an impossibility even in New Japan. Ueyehara affirms most positively that "it is not the personality of the Emperor . . . upon which the strength and the value of the Japanese monarchy chiefly depend," and he claims that it is "the unique history and tradition of the Imperial Throne." But we make bold to say, even in opposition to a Japanese, that the personality of the Sovereign is of special importance. It is possible that, in general, the Imperial personality weighs more than the individual personality. But, in the case of the late Emperor, Meiji Tenno, his own personality, in the sense of his individuality, was no small element in the loyalty and patriotism of thousands of his subjects. And it is not an indivious comparison to state that the feeling toward the present Emperor does not seem as yet to be the same as that toward his illustrious father, Mutsuhito the Great.

Public Opinion

One of the most significant phases of the political progress made in New Japan during the past 25 years of constitutionalism has been the development of an expressive public opinion. During the feudal system, there was, from one point of view, no public opinion; or, at the best, it was very narrow and local in its sphere of action. But along with the granting of popular rights and privileges, with the spread of education, with the growing importance and power of the press there has been a most gratifying evolution of public opinion. It is true, "and pity 'tis, 'tis true," that often the most evident manifestation of that opinion has been in mob violence. But, in spite of that unfortunate, though perhaps inevitable, concomitant, public opinion, as ex-

pressed in the press and on the platform, can no longer be ignored, but must always be taken into consideration. And the Japanese press, in spite of the existence of "yellow journals," is a creator and expressor of sound public opinion.

There can be little, if any, doubt that it was nothing but the power of public opinion which overwhelmed the Katsura Ministry in February, 1913, after less than two months of official life. And it was likewise the fact that public opinion held the Yamamoto Ministry responsible for the naval scandals which forced that Cabinet out of power in March, 1914, in spite of the fact that it was supported by the Seiyukai with a big majority in the House of Representatives. And it was public opinion which upheld the Okuma Cabinet several months against that hostile Seiyukai majority and finally, in the election of March, 1915, completely turned the tables and gave Okuma a big majority. Of course, public opinion is likely to be more or less fickle and sometimes even unjust. In 1913 the Seiyukai members of the House of Representatives were the popular idols on account of their resolute opposition to Katsura; in 1914, because they supported the Yamamoto Cabinet, they were in danger of suffering personal indignities at the hands of a mob, and had to be specially protected from violence. Verily, the populace are iconoclasts as well as hero-worshippers.

It goes without saying that public opinion in Japan would be more powerful, as well as less violent and more regular, if a larger number of people possessed the electoral franchise. The number of electors has, it is true, increased considerably in 25 years, as may be seen from the following statistics:

1890	...	...	...	...	453,474
1892	...	...	...	...	460,914
1894	...	...	...	...	464,278
1896	...	...	...	...	467,607
1898	...	...	...	...	501,450
1902	...	...	...	...	983,193
1904	...	...	...	...	737,788
1908	...	...	...	...	1,558,676
1912	...	...	...	...	1,550,978
1915	...	...	...	...	1,546,241

The increase in 1902 was due to the lowering of the property qualification. The decrease in 1904 was due to the lowering of the land tax. The increase in 1908 was due to the extension of the electoral franchise to the Hokkaido and several new urban districts. The increase in 1915 was due to the extension of the franchise to Okinawa prefecture.

One discouraging feature has been that so many of the electors did not exercise their privilege. An improvement in this respect would doubtless follow the complete establishment of party government and a wider extension of the franchise. The election in March, 1915, indeed showed a marked improvement. Whereas the average rate of non-voters among the electors was almost 12 per cent in 1898, almost 14 per cent in 1903 and 1904, over 14 per cent in 1908, and over 10 per cent in 1912, in 1915 it was only about 8 per cent. These figures are eloquent.

The following are the full statistics of the election of 1915:

Number of electors	...	...	...	1,546,241
" " von voters...	...	...	...	121,548
" " voters...	...	...	...	1,424,693
" " invalid votes	...	...	...	7,557
" " valid votes...	...	...	...	1,417,136

These figures show that a larger proportion of the electors than ever before appreciated the value of the "precious one vote."

Woman's suffrage is fortunately not yet an issue in Japan; but universal male suffrage has been discussed. A bill to that effect once passed the House of Representatives but was

shelved in the House of Peers. Indeed, it may not be wise to pass too suddenly to such an extreme as universal suffrage; it may be better to extend the franchise gradually by reducing the amount of the tax qualification required for eligibility to vote. It is hoped that the Okuma Cabinet, if it survives till the next regular session of the Diet in the winter of this year (1916), will introduce an electoral reform bill to round out the quarter-century of Constitutionalism in Japan.

It is certainly desirable to ascertain what conclusions and inferences may fairly be drawn from what has been recorded above. In the first place, it is quite evident that when one writes of the government in Japan a capital "G" should be employed. There is nothing small or weak about the administration, whether national, provincial, municipal, or what not. It all centers about the national administration in Tokyo; it is a case of centralization; it is a centripetal form of government; it gravitates around and toward the Imperial Palace in Tokyo. It was with good reason that Dr. W. E. Griffis called his first great work on Japan "The Mikado's Empire;" for the Empire belongs to the Emperor. And it is also with good reason that Dr. Griffis gave the title of "The Mikado" to his most recent work. Moreover, a book, "Japan to America," compiled by Mr. Naoichi Masaoka, and published by Putnam (1914), includes a contribution of a few pages by Mr. Ichiro Tokutomi, the able editor of the *Kokumin Shimbun*, Tokyo, on "Centripetal Mikadoism." We quote here some of Mr. Tokutomi's expressions:

"But our imperialism, our democratism, our socialism—all these centre upon a single principle and it is 'centripetal Mikadoism,' as we express it and advocate it. Rome was at one time the center of the Roman Empire; hence the adage, 'All roads lead to Rome.' In a like manner the Mikado is the center of our nation. Considered as a body politic, it has him as its sovereign; considered as a distinct race, it has him as its leader; considered as a social community, it has him as its nucleus. Who can, then, contradict me when I say that all our 'isms'—social, racial and political—are included, involved, implicated, by this 'centripetal Mikadoism?'"

And he attributes Japan's "great socio economic revolution" to the "automatic process" of that "centripetal Mikadoism."

Another natural inference from these studies is, that custom is more powerful than law. Or, to express the idea in another way, it takes a long time for a new law to establish itself against an old custom. The feudal system had been so strongly entrenched in Japan, that, even after it was nominally abolished, it persisted in fact in many survivals which die hard. It is true that there is a strong popular demand for more representative institutions; it is also true that the mass of the people are somewhat contented with the *status quo* and are rather submissive in spirit. They still endure official surveillance and hold officialdom in awe; they take off their hats when speaking to a policeman. The survival of absolutism may be seen in the tendency to establish government monopolies and to nationalize industries. The survival of feudalism is evident in the political party system, where clannishness still prevails and loyalty to men is stronger than fidelity to principle.

Another conclusion one may reach is that nominality does not correspond with reality. The Japanese have a common expression, *umai mujitsu*, which means literally "having name without reality." A certain thing may be so only in name, not in reality; nominally so, but not really so. This is a criticism which some have brought against Japan's present political system; that it is only nominally, not really, Constitutionalism. This may be true to a certain extent; the same political phrases do not connote exactly the same things in all countries. But there is another phase of this nominality. Theoretically and nominally, the central government,

for instance, has control over each prefectural government; the Emperor appoints the governor of each prefecture, and the Minister of Home Affairs has the authority to dissolve a prefectural assembly, but he rarely exercises that authority. Both the Minister and the governor, though they are centralizing officials, prefer to respect local public opinion in local affairs.

The political campaign of the special election of March 25, 1915, calls for comment in this connection, because it illustrates some points in the evolution of popular institutions in Japan. The conduct of a political campaign had become too formal and had fallen into the hands of professional canvassing agents; so that, to some extent, the yen had become mightier than the pen. The cost of election had grown to be enormous, except in the very few cases in which a candidate was so fortunate as to meet with little or no opposition. It was, of course, a matter of discussion as to what constituted the legal expenses of a campaign; and it required no little care and ability to steer clear between the Scylla and the Charybdis of parsimony and bribery. It seemed to demand several thousand yen for an "average man" to carry on a campaign in a strictly legal manner. This sum would include such items as printing, postage, advertising, rent of offices, carriage hire and speech-making expenses.

House to house canvassing is one special feature of a campaign and is here dubbed "the submarine attack." It has been carried on by teachers, family doctors, female hair dressers, *et al*; and it has been especially utilized, in a few cases, by female members of the family of the candidate. This feature of women as campaigners has been strongly discussed, pro and con, by the press.

In the campaign of 1915, speech-making was a more prominent feature than ever. Ozaki, Minister of Justice, and the Premier himself actually "took the stump!" One unique feature of the campaign was the sight of Okuma, on a trip westward by rail, making short speeches from the car window at important stations! Another unique feature was the fact that, at many places where the presence of Ozaki or Okuma was impossible, their "tinned speeches" were heard from the phonograph! And an opposition candidate went one better by letting Ozaki speak through the machine but stopping it every few minutes to answer Ozaki's points! There certainly never has been such a "popular" campaign.

It may be added that the landslide to Okuma was the popular response to this campaign. It was a personal victory for the "grand old man," because he was not afraid to appeal to the people. The Army Increment Scheme, which had been the principal issue in bringing about the dissolution, was scarcely mentioned in the campaign. Even the important negotiations with China cut little figure; although they probably had more weight than the Two Division Increase. The result of the election was not so much pro Doshikai as anti Seiyukai. It was not that the electorate loved the Doshikai more but the Seiyukai less. It was a question chiefly of Okuma or Hara (present leader of the Seiyukai). It was because the people trusted Okuma. And, when Okuma's great victory was announced to him, he remarked;

"Now we can witness the dawn of real Constitutionalism in Japan."

Dr. Ukita, editor in chief of the great monthly magazine, *Taiyo* (Sun), has discussed in quite an interesting manner the change of methods in national elections. According to a summary of his article, he expressed the opinion that there have been three periods, those of robbery, jobbery and beggary. In the first period, violence was used to a large extent; in the second period, bribery rather took the place of violent method; and in this third period, the methods resemble those of begging an election.

If we turn to consider the work of the Diet, we find one phase quite in line with what is going on in the national assemblies of other countries. The real business of each House is being done in the committee rooms rather than on the floor of the House. Ueyehara remarks on this point:

"The government has invented a doctrine called 'the principle of *fugen jikko*, or practice without discussion.' But the discussions in each House are not necessarily checked; the oratorical displays are not shut off; but the decision is often left to the calmer consideration of a committee instead of the excitement of a debate."

The House of Peers is a troublesome element in the political world of Japan. Ueyehara claims that it is "a great obstacle to the proper development of constitutional government." But he rightly acknowledges that "the real usefulness of the House of Peers" will be more evident, if "Ministers become responsible to the House of Representatives."

In spite of the fact that mob violence is too frequent, there has been a great growth of the power of public opinion. There is even a trend toward democracy, not so much in form as in spirit. Some writers go so far as to assert that there is no public opinion, in the true sense of the word, that there is only mob opinion. But others believe that they see in mob violence only an unfortunate mode of expression of real public opinion; and they think that, with less official repression, there will be less public violent expression. They write about "the awakening of the people;" of the "tendency toward popular government;" as "steadily growing strong;" and they claim that "on the whole, it must be admitted that Constitutionalism has made marked headway." They assert that the time has passed when the Japanese nation would follow the lead of one man "as sheep follow the shepherd." The development of such public spirit is no small result of the past 25 years.

In conclusion, it is interesting to notice how the Japanese seem to have united and harmonized various forms of government. They have not adopted but rather adapted what they found useful in other political systems and have harmonized all with Imperialism. The Emperor is still nominally and theoretically the head of the Empire, the sole sovereign; but he has voluntarily given away some of the administrative functions to an Imperial Diet, partly representative in its nature; and he has permitted a large measure of local self-government. In other words, the Japanese have evolved a form of constitutional government which theoretically recognizes the "divine right" of the Emperor to be absolute in his realm, but in practice gives to the people an increasing measure of administration with such representative institutions as an Imperial Diet and local assemblies. McLaren says:

"A Constitution which is obviously a compromise measure, or a system of government, which combines the three hostile elements of an absolute monarch, a bureaucratic oligarchy and a representative legislature, is not likely to be permanently satisfactory to a nation."

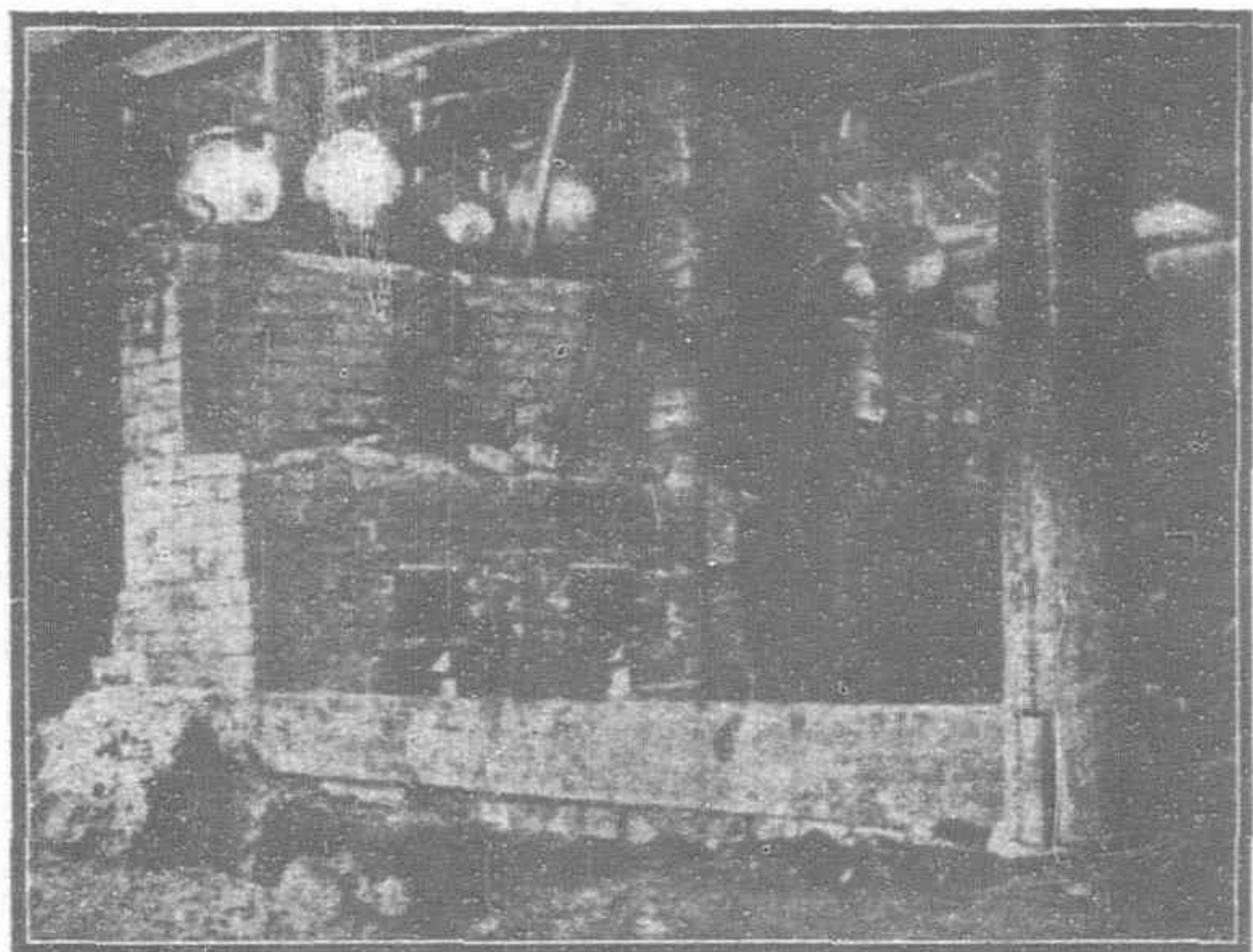
The Tokyo *Nichi-Nichi Shimbun* says:

"Our political system is neither monarchical nor democratic, neither bureaucratic nor parliamentary, neither militaristic nor anti-militaristic. These six elements are put together in an unharmonious conglomeration."

This is the record of twenty-five years of "Constitutional Imperialism in Japan." It is "imperialism" in origin, in essence, and in substance, in theory and in fact; but it has been, is being and will be, greatly modified by "constitutional" elements. It may never be reversed to "Imperial Constitutionalism;" but it is quite likely that the "imperial" features will grow smaller and weaker, while the "constitutional" elements will grow larger and stronger. This will come not by revolution but by evolution.

ANTIMONY PRODUCTION IN CHINA

[By F. L. COLE IN MINING AND SCIENTIFIC PRESS]



STIRRING ANTIMONY IN FURNACE

The high prices for antimony have directed attention to China as a source of supply. Owing to the mining being entirely in Chinese hands, there has been little accurate information published regarding ore occurrence or smelting methods. The first record of antimony ore in the Chinese customs returns was in 1895 when a small quantity was exported from Shanghai. In 1904 the returns show that *regulus, crude, and ore were exported. These three, together with antimonial refuse, which is also called 'ash-and-slag,' being the residue from producing crude antimony, have since then become regular articles of export. Antimony oxide has recently appeared in the customs returns, but it is probably the natural oxide or oxidized ore. The first recorded exports were from Hunan province, which has continued to be the leading producer. No proof exists that the ancient Chinese mined antimony, but they produced iron, copper, lead, zinc, and other metals for many generations. Local tradition has it that two Swiss jewelers at Shanghai, on being shown samples of antimony ore, immediately traced the source, and started the trade in 1895.

Exports first were made from Shanghai by a few foreign merchants. The foreign merchant in China used to handle everything that gave a profit and in early days the profits were not small. The ore was brought from the interior to the merchant, who sampled it, paid as little as possible, and shipped the cargo to Europe or America. The business gradually grew and the headquarters of it moved up the Yangtze river to Hankow on the arrival of German metal-buyers, who brought out men familiar with the trade. Later, the centre moved to Changsha in Hunan, 250 miles farther inland. Now buyers go direct to the mines with hard money in hand and compete with each other for ores and products from the opulent mine-owners, who make their own prices.

Antimony is known to occur in nine provinces: Chekiang, Kwantung, Kwangsi, Yunnan, Szechuen, Kweichow, Hunan, Hupeh, and Kiangsi. Of these Hunan is the principal producer, but the production in Kweichow, Yunnan, and Kwangsi is growing. It is reported by the native press that the duties in Kwantung on antimony have been remitted for three years from last October in order to stimulate exploitation.

C. Y. Wang, in the 'Mineral Industry' for 1913 mentions the localities of occurrence in Hunan, Kwangsi, Kwantung, and Kweichow. A. S. Wheeler, mining engineer for the Board of Agriculture, Commerce, and Industry,

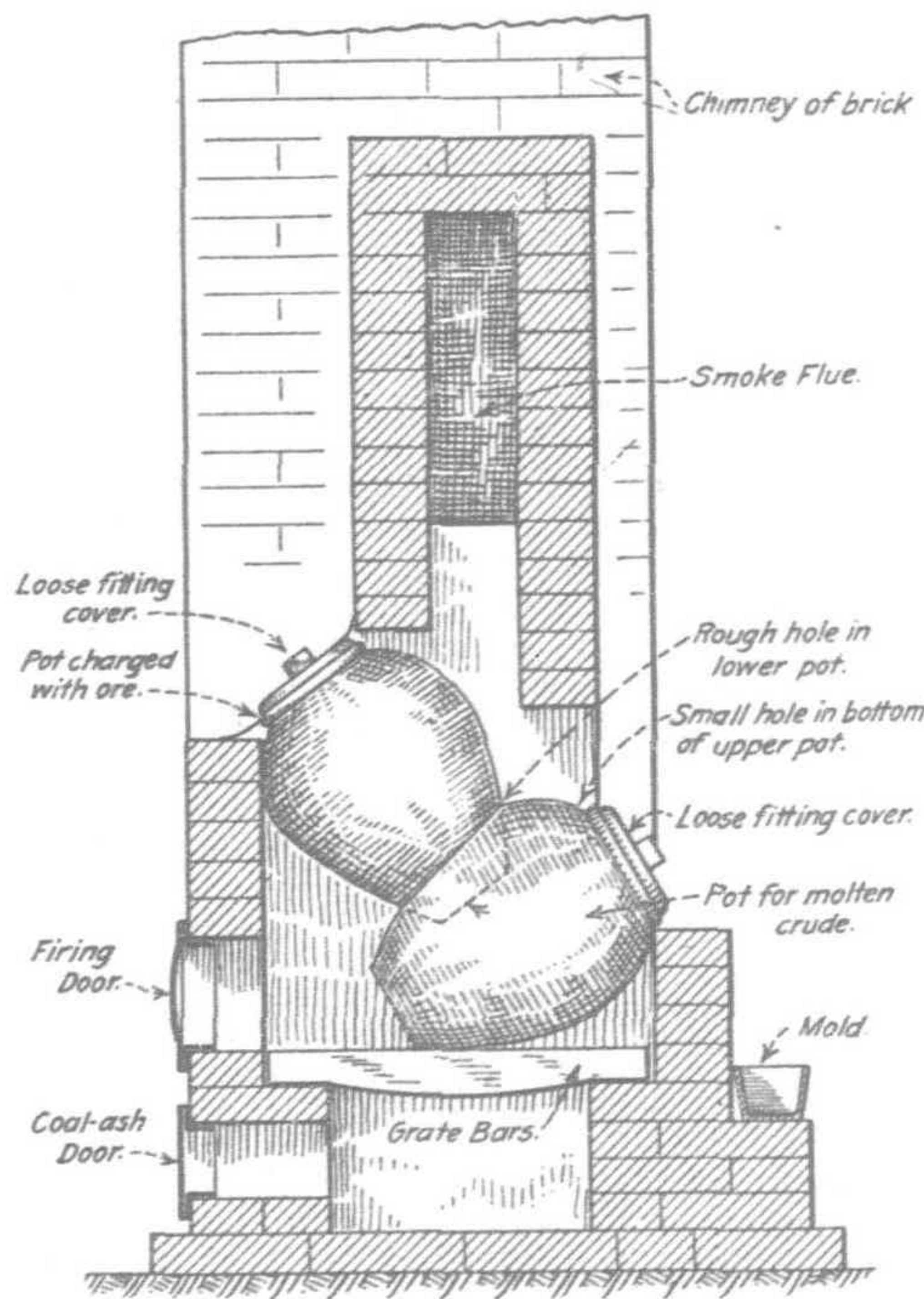
*'Regulus' means antimony metal of 99% purity; 'crude' is the artificial antimony sulphide of much lower purity.—EDITOR.

Peking, in the September, 1915 issue of *The Far Eastern Review*, has given the best general description of the Hunan deposits. There is little reliable information regarding the other occurrences although the general geologic conditions are somewhat similar.

The Hunan deposits may be generalized as fissure-veins with quartz gangue cutting shale, quartzite, and schist; and scattered deposits in limestone. With the exception of the Pan Chi mines (described by Wheeler, and also in the *Mining and Scientific Press* of July 10, 1915) none of these deposits has been exploited to any depth. The entire output of Hunan is 6,000 tons of ore per month.

W. R. Schoeller¹ described the Hunan ores and gives interesting information as to their purity. No careful study has been made as yet. The ore is principally stibnite, which in favorable places both at surface and underground is more or less oxidized.

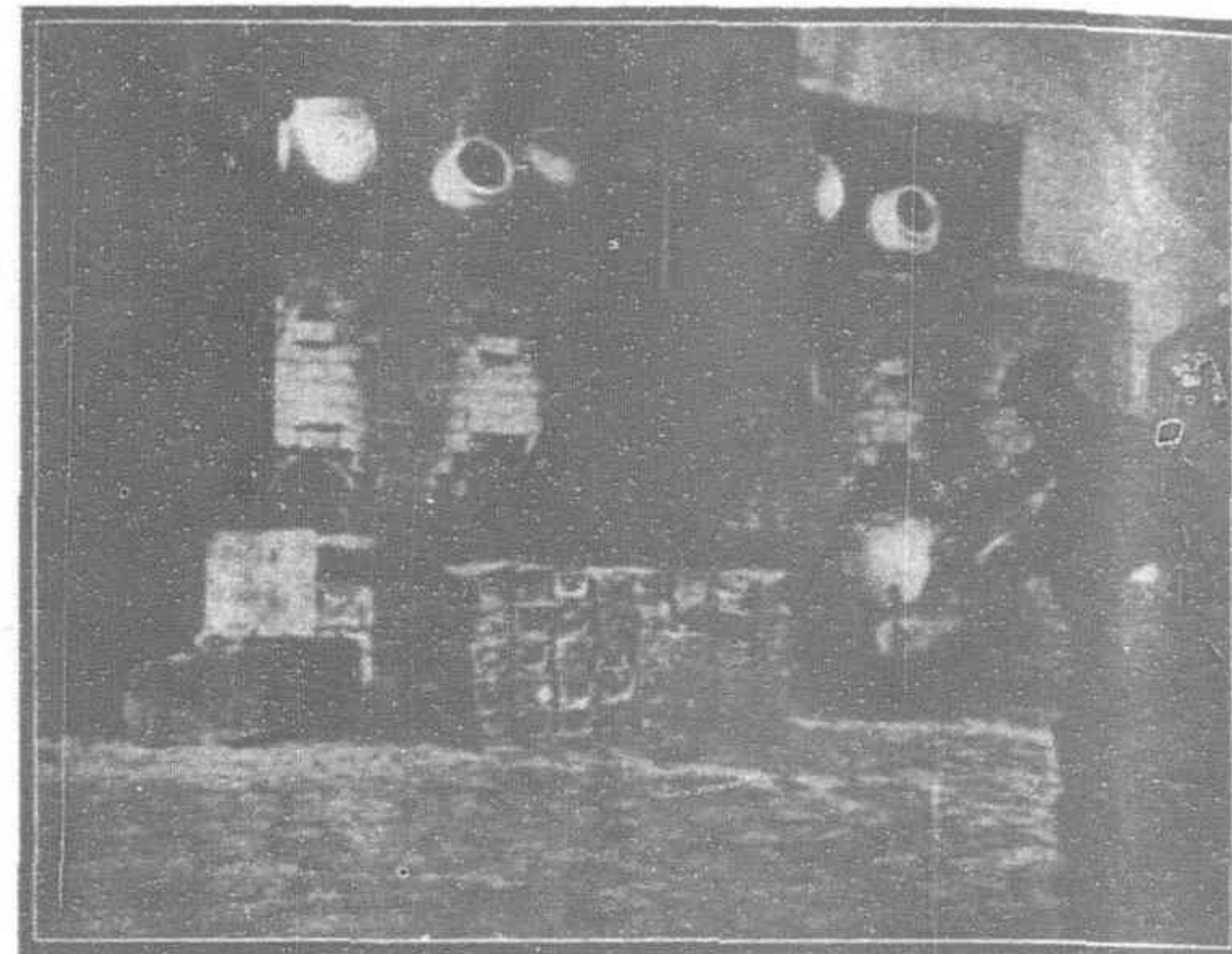
The mines, like all Chinese underground workings, are mere gopherings, with no apparent system except to get out the visible ore above water-level as quickly as possible, in any manner, and with no thought of development. A pinch in a vein or a fault is enough to cause work to be abandoned. Native-made



CRUDE ANTIMONY FURNACE

black powder is used, and antiquated clumsy tools that add to the general inefficiency. The working-places are impossible for any but natives and the output per man is decidedly small. The ore is carried or dragged to the surface in bamboo baskets, and small amounts of water are handled in hand-operated bamboo plunger-pumps that work in relays, the sump of one being the discharge of the other. Open-flare oil-lamps, the smoke of which, together with the general insanitary conditions underground, make it anything but pleasant.

¹ Journal of Society of Chemical Industry, London section. No. 6. Vol. XXVII, 1908; No. 10, Vol. XXXII, 1913; No. 4, Vol. XXXIII, 1914.



POURING CRUDE ANTIMONY

The purpose seems to be to obtain the least possible results and provide the most work for the greatest possible number of people. But when the cost of the labor is considered, the results are not as bad as would be supposed. Until recent prices stimulated search, only high-grade ores were mined, but at present all possible grades are utilized and all old waste-dumps are being carefully sorted. Each outcrop has numerous companies working on various lengths, usually units of 10 Chinese feet (said feet varying with each locality) and the working of each company is called a 'mine.' So reports of a large number of mines in a district are apt to be misleading. Actual work is done on a kind of co-operative basis by contractors, wages seldom being paid for day's work. The Chinese insist on having a gamble with everything they undertake, so there are innumerable combinations of leases and sub-leases, which the foreign brain is incapable of comprehending. The 'it' is not unknown, but unless carried on in too open a manner, no attention is paid, as "everybody is doing it." Payment for labor is usually at a price or at so much per picul (133½ lb.) of clean ore, at the pit-mouth. The ore so received is sold to the nearest crude smelting-plant, which also absorbs the local high-grade output.

Hunan province, being rather independent, pays little attention to the various lengthy rules and regulations made by the Central government at Peking. The discoverer of an outcrop can apply for a prospecting-right over a given area through the local officials and the provincial guild to the provincial mining department. This permit entitles him to open the property; after a time, application is made for a working-permit accompanied by fixed payments. This permit necessitates a survey. Recent rules require any exploiter or company to show that there is actually a certain amount of capital available for the proper opening of the mine. This is obviated by forming a company and giving the shares a cash value equal to the requirements, with very little, if any, actual cash in the treasury. This rule is held over the heads of the small people but those in power can cheerfully dodge its ramifications. A tax of 5% on the value of the ore at the mine is collected, and a guild-tax and a 5% export-tax are collected by the customs on the market-value of the ore or products before they are exported. There are probably local taxes on smelting-plants, and various transport-dues along the roads and rivers.

As mining has been done profitably for some years in Hunan, the local rules are more helpful than otherwise to the industry. Transport of ore from the interior to steamer connections is done by coolies overland and by boats on the rivers.

SMELTING METHODS. The furnaces for producing 'crude' metal are simple in construction and are made with no regard to economy either in fuel or the recovery of oxide from the escaping fume. They are built in units of four, occupying a floor-space of 12 by 2½ ft., and standing 5 ft. high. One furnace can be repaired while the other three-fourths of the unit is working. The bricks used are local and the cost of one unit varies from \$20 to \$40. The grate-bars and doors are also made locally, the grates consisting of 12 to 16 bars, a half-inch thick, 14 in. long, and spaced about a half-inch apart. The smoke and fume go to a common flue at the top of the furnace and are carried down in the centre to a common underground flue connecting with a chimney that serves all the furnaces.

The pots used are made locally; they average 12 in. inside diameter, 18 in. high, and the hole at the top is 7 in. They hold 50 lb. of ore. As shown in the sketch, the lower pot is cut on one side to receive the bottom of the upper pot. The upper pot has a small hole about a quarter-inch wide and an inch long cut in the bottom for the liquated sulphide to drop into the lower pot. These pots never join tightly and much fume escapes. The pots last up to two weeks, depending on the care of the operators, and become broken from the stirring of the ore in the upper pot.

When the furnace is hot, the upper pot is charged with lump and fine ore mixed, the greater pieces about the size of a dollar. Cheap local coal is used and the fire raised after charging. The tops of the pots are loosely covered, usually with a round cast-iron cover that collects oxide on its lower side. As soon as the temperature is high enough the ore begins to liquefy, forming a pasty mass, and is frequently stirred with iron rods until it is considered to be finished, when it is in a more or less dry state. Meanwhile, when enough liquated sulphide has collected in the lower pot, it is dipped out with cast-iron spoons into molds which form brick-like bricks of 10 lb. weight. The bricks are then weighed and boxed for shipment. The residue, left in the upper pot, is removed by spoons and thrown into a square iron box formed by two L-shaped castings; when cool the refuse is in a solidified lump. This refuse contains from 12 to 30% of antimony and silicious gangue, depending upon the grade of ore and the care used in smelting. The operation requires two to four hours during which time the furnace is surrounded by fumes that are unpleasant and injurious. Since the value of the tri-oxide has become known it is occasionally collected from the flues and chimneys and sold to plants producing regulus.

The smelting is done by contract, the contractor furnishing the labor, fuel, and pots, and keeping the furnaces in repair. There are at least twice as many men employed as necessary. Prices vary with local conditions but 'crude' is usually smelted for \$15 per ton. It is packed for shipment in cases bound with strap-iron and holding 224 lb. net, and about 240 lb. gross and measuring 10 by 10 by 22 inches. The cases are poorly made, and as the metal is brittle there is often loss by breakage. Cargo is usually re-packed in Changsha or Hankow and the cases bound in sacking before ocean shipment.

The smelting of 'regulus' in Hunan is on an entirely different basis from that of 'crude' smelting, as it is practically controlled by a monopoly. In 1908, C. Y. Wang² obtained in France for the Wah Chang Mining & Smelting Co. the rights for China for the Herrenscheidt volatilization process; furnaces were installed in Changsha by French engineers and they have since been operated by Chinese. This process converts sulphide ores into tri-oxide, which is smelted for regulus in reverberatory furnaces. The best results are obtained on low-grade ores. The Wah Chang Co. also obtained from the Peking govern-

ment the sole right to produce regulus in Hunan. This company owns some low-grade mines and also purchases ores. His Herrenscheidt furnaces have been erected in Yunnan near the treaty port of Mengtze by the Pao Hua Co., also connected with the Wah Chang Co. The latter produces regulus from crude, after converting it to tetra-oxide by a slow roast and also from oxide ores by direct smelting. There are at present several other plants in Hunan smelting oxide ores direct, but they all either sell their product direct or through the Wah Chang Co. This company's monopoly is contrary to the letter and spirit of various treaties with foreign powers, but so far they have succeeded in keeping their rights and have even had them extended.

The reverberatory furnaces used in smelting of oxide ores vary in size from a capacity of 300 to 1,000 lb., the size holding 500 lb. being most used. They usually have a low roof sloping downward toward the chimney and a deep bed with its lowest point opposite the one working-door. The hearth sometimes consists of a square cast-iron box lined with ground fire-brick and kaolin mixed, which is put in wet and well beaten; at other times the lining is used without the iron box.

The same lining is generally re-used and is unsatisfactory, lasting from one week to two months, and an extra number of furnaces must be kept in repair to assure a constant output. The furnaces are fired with soft coal and are connected to a common chimney through flues, generally underground, that are occasionally cleaned for the condensed oxide. The oxide is mixed with soda-ash and charcoal in varying proportions, usually about 10% each. When the charge is melted the furnace is cooled a little to thicken the slag, the slag is entirely removed and the molten metal skimmed clean. A 'starring' flux is then added composed of soda-ash, powdered crude, a little charcoal, tri-oxide, and sometimes small quantities of powdered oxysulphide ores. This starring flux is varied according to the kind of material being melted and is used over again until it will no longer produce the 'star.' As soon as the flux is melted, samples are taken of the metal; when it gives a good star the refining is judged to be complete and the charge is ladled out with cast-iron spoons into molds, producing a cake 8 by 8 by 4 inches and weighing 40 lb. A little slag is put in the mold before the metal is added, and the metal is kept covered with slag. The whole operation takes from four to six hours. Oxide ores are smelted in the same manner, being broken by hand to one-quarter inch size; the charge is more frequently rabbled and the operation requires 10 to 12 hours. Regulus is boxed for shipment in boxes similar to those for crude, except slightly smaller and weighing (net) ten cases to the long ton.

With careful manipulation the losses in smelting oxide are not over 6% and with oxide ores from 10 to 15%. Some of the loss is condensed as oxide in the flues and recovered. The star is no guarantee of purity and can be produced on 95% regulus as well as on 99%. With the naturally pure oxide ores and with the oxide from pure sulphide ores or the residue from 'crude,' the production of 99% (or better) regulus is only a matter of careful manipulation. As far as known, no one in China is producing regulus from crude or sulphide ores by the precipitation methods. The smelting of antimony refuse is being done at several plants, and with one exception the processes used are practically similar. The operation is to heat the refuse with charcoal or coke in small brick shaft-furnaces, lined with fire-brick, using a light blast and condensing the fume in chambers and scrubbing-towers. Numerous difficulties arise, the principal being the length of time required to oxidize the refuse and the difficulty in handling large charges, since the charge agglomerates, having to be constantly punched with bars. The condensers are various, but condensing seems to be the least difficulty; the best results are obtained in small furnaces with easily removable gratebars, completely

closed, and with an air-blast sufficient to oxidize the antimony and not melt the gangue, which is principally silica. These furnaces are opened and the scoria removed several times a day through the grates. Charging is done in small quantities at frequent intervals. With a high scrubbing-tower no suction is needed for the condensers. Two furnaces 9 ft. high and 3 ft. interior diameter connected to brick condensing-chambers, in all 50 ft. long, thence to a 40-ft. wooden scrubbing-tower, will handle per day three tons of refuse containing 25% of antimony. Refuse containing less than 15% antimony is hardly worth treatment. The oxide obtained is quite pure and contains from 65 to 80% antimony. Whenever the fume comes in contact with water, sulphuric acid is produced, causing trouble with pipes and tanks for the precipitating of oxide from the scrubbing-towers. One plant has a blast-furnace with a capacity of 20 tons of refuse per day; it is intended to condense the fume, charge limestone and iron for flux, and produce crude metal to be refined in reverberatory furnaces. A mechanical roaster for successfully handling the refuse in larger quantities would be satisfactory. Flotation would probably produce a high-grade concentrate. However, the supply of refuse being limited and coming from many sources and the amounts remaining in the old dumps having been well collected, there is not enough supply available to warrant any extensive installation for this particularly interesting branch of the industry, and it would hardly be profitable with low market-prices. From the average quality of refuse, a ton of regulus is produced from six tons of refuse. One plant is smelting under contract to produce regulus containing 65% of the antimony contents of the refuse.

Constant careful supervision, preferably foreign supervision, is necessary to prevent theft and to obtain good results in smelting. Skilled labor with competent supervision in China is more of a problem than is generally supposed. The actual cost in making one ton of regulus by the Herrenscheidt process, including power, labor, supervision, fuel, and fluxes is not over \$25. One plant quotes \$35 for custom smelting of oxide ores. The actual cost of smelting oxide ores of 50% antimony, including the above items, without power, is not over \$15 per ton of regulus. Depreciation, repairs to plant, and other charges vary with the size of the plant. The price of ore varies with the market price of the metal. When the price is \$125 per ton, regulus can be made and sold at a profit of at least 50% and at the present prices there is a profit of from 100% to 500%, depending on how fortunate the producer has been in securing his ore. There is much room for technical improvements in all the processes, and these may come with low prices and competition.

The present scale of wages and prices for materials, with normal freights and prices, render it difficult to see how any other country can compete with China in producing 'regulus' and 'crude.' The Wah Chang Co. has an output of 15 tons of regulus per day, and several other producers bring the total for Hunan to 20 tons per day. At or near Hankow there are five plants supplied with ores from Hunan. Three plants are working on refuse, and two on oxide ores, with a combined production of 10 tons per day. The plant near Mengtze, Yunnan, was producing two tons per day in September; there is some production from Wuchow near Canton, and ores are being shipped to Japan from Canton.

MARKETING. Up to the beginning of the War, the export of antimony was principally in the hands of the New Chinese Antimony Co., a branch of Cookson & Co. of England, together with French interests, and a few German firms who were interested in ores and metals besides antimony. The New Chinese company had an agreement with the Wah Chang Co. for all of their output and the latter could sell only to it. Differences arose in this agreement at the beginning of the War, resulting in cancellation of the agreement, but the Wah Chang pays the

² 'Antimony' by C. Y. Wang; 'Metallurgy of Non-ferrous Metals,' William Gowland.

JAPANESE COTTON INDUSTRY

[By MR. E. F. CROWE, BRITISH COMMERCIAL ATTACHÉ AT YOKOHAMA.]

New Chinese a percentage on all sales for one year and can sell to anyone. Having experienced a boom at the time of the Russo-Japanese war, the Chinese dealers were confident that another boom was coming, and the Wah Chang Co. immediately absorbed several independent producers and strengthened their political fences so that in a few months they virtually controlled the Hunan market, not only for regulus, but for crude and ore as well. Huge profits have been made that will stimulate mining in Hunan. Buyers from all sources came into existence, as nearly every foreign firm in China wanted antimony and the local prices jumped daily. Few of the would-be buyers knew anything about antimony and consequently there were some sad mistakes. The home brokers and buyers wanted firm offers for a few days, but the Chinese wanted cash, as the time lost in telegraphing might result in the loss of a sale on a rising market, which was often the case. Formerly regulus, crude, and ore were purchased on contract for forward deliveries with part payment in advance or in some cases full payment in long-term native drafts that could be discounted locally, so the dealer often had the cargo and had turned it for a profit before the drafts came due. With the rising market, however, matters changed completely, so that producers and native brokers often sold to the nearest cash buyer regardless of the contracts hanging over them, with the result that the foreign merchant who had contracts and had sold forward on the strength of them was left holding the bag. The result has been that, with the exception of a few reliable producers, all business is cash and there are numerous cases for settlement involving large sums in which foreign consuls are writing demands and pounding tables in vain, as there seems to be no remedy for the recovery of money advanced or cargo that should be delivered. The Wah Chang Co. opened an office in New York, where it sells its own output, and the export business has resolved into the hands of a few foreign firms. Japanese have been the largest buyers of crude as they ship to Japan and convert it into regulus for the Russian and American markets, having the advantage of their own shipping companies and financial organizations. Some ore is being produced in Japan and a little from Korea; also there is some produced from Indo-China but the bulk of the Japanese regulus is made from Chinese crude.

Since the war very little ore has been exported from China except that which was bought previously; the high freight-rates and the difficulty of getting shipping space for bulk cargo preventing ore shipments abroad. Chinese regulus suffers in the market from either lack of advertising or astute competitors, as analyses show it to be as good or better than other brands.

The table below shows the export of antimony from Changsha for 1915 to November 1, the 1914 statistics for all of China being not yet available. The ore and refuse went principally to Hankow for refining.

Antimony regulus	5,255 long tons
Crude antimony	13,502 " "
Antimony ore	743 " "
Antimony refuse	3,839 " "

N. Y. K. NEW VESSELS

The N. Y. K. has now 92 vessels with a total tonnage of 430,000, although the Yasaka Maru, 11,900 tons, and Takata Maru, 7,500 tons, have been lost. The fleet will be increased shortly by the addition of nine new vessels with a total tonnage of 54,800, which will be launched or placed in service this year. The company has now under construction three ships of 7,500 tons each, three of 7,300 tons each, two of 7,400 tons each and one of 30,000 tons. At the end of this year the company will have 101 vessels with a total tonnage of 484,800.

Imports of raw cotton again increased in 1915. Detailed Customs returns are not yet available, but up to the end of November, 1915, imports amounted to 6,736,000 piculs valued at 200,657,000 yen as against 5,666,000 piculs valued at 199,737,000 yen for the same period in 1914. American cotton showed a proportionately larger increase from 1,043,000 to 1,439,000 piculs, while Indian cotton rose from 3,982,000 to 4,642,000 piculs. For this the increased demand for medium and finer counts referred to later is responsible.

The disturbed conditions in China which discouraged forward transactions in yarn prevented the mills from buying more than their immediate requirements during the first part of the year. But the Indian market not being influenced by the conditions which operated to send American prices up did not show the same power of recovery for some time and when trade prospects began to brighten in March and April Japanese spinners came forward and bought largely until prices went up and sales were checked. The mills adopted a similarly cautious attitude in their purchases of American cotton, but were able to take advantage of the slump in prices in the summer of 1915 to lay in stocks before the big rise in September. The prices of yarn moved in close sympathy with those of raw cotton, but the mills being well supplied with capital were little affected by its immediate fluctuations. Twenty counts which were quoted at yen 94 in January were at yen 122 by the end of the year.

The state of the Chinese trade in one sense determines the welfare of the Japanese spinning industry, as though the home demand is larger, it is steady enough to cause little anxiety, raised or depressed by temporary conditions but expanding constantly. The China market, on the contrary, is very sensitive and has shown itself liable to sudden fluctuations in recent years. Time and again when the Japanese export trade to China has apparently been on the eve of striking development, a change in the situation has upset calculations. In April, 1915, exports of yarn and piece-goods to China seemed to be booming. The steady rise in American cotton had been reflected in the recovery of the price of yarn and with a rising market, and China apparently ready to buy, the outlook was promising. All expectations, however, were falsified by the crisis which arose between the Governments of Japan and China and the boycott which followed its settlement. Not till August did trade recover from the blow which had been dealt it.

At the same time, conditions in China favoured the local spinner, first the abundant crop of Chinese cotton and secondly the fall in the price of silver. Chinese competition in the coarser counts was accordingly severe. In medium and finer counts and in piece-goods, however, Japanese merchants profited by the stoppage of German goods and possibly also by some slacking of imports of Manchester goods to advance their position. The net result was that while exports of counts up to 20 declined slightly for the first eleven months of 1915 and counts over 20 grew, the total was only slightly in excess of that for 1914. The exact figures were:—

	1914.	1915.
Up to 20 ...	129,825,000 k'n.	126,337,000 kin.
Over 20 ...	18,056,000 "	23,901,000 "
	147,881,000 "	150,238,000 "

Over 86 per cent of these exports went to China and Kwantung and 12 per cent to Hongkong.

If, however, these figures are compared with the same period in 1913 then it will be seen that the growth has been striking, the export then amounting to 124,000,000 kin.

The home demand was good and would have been better but for the low prices of rice and raw silk in the first half of 1915. The high price of dyes which raised the cost of the finished goods also checked sales after a time. Raw silk, however, recovered and the price of rice also rose in sympathy with the general appreciation in prices. Furthermore, the burst of prosperity which has followed the sudden expansion of exports and the general tone of optimism are regarded as ensuring increased sales.

Conditions being as stated, while the spinning mills realised good profits in 1915, it could not be regarded as one of their best years, though spinners of fine counts were very successful, particularly as in addition to causes already stated the demand for fine counts for knitted goods was great. In August, 1914, the panic in the yarn market caused by the outbreak of war brought many dealers to the verge of bankruptcy. Meanwhile the output of yarn had increased considerably with the installation of new spindles and during the whole of 1915 it was necessary to curtail output, 20 per cent of the spindles being sealed during the first seven months and 10 per cent during the remainder. The mills have agreed to resume normal working from February 1st, 1916. The present output is about 160,000 bales per month and it is estimated that full work will bring this up to 165,000 bales. Now the home consumption has gone from 85,000 to 95,000 bales per month. Exports averaged 50,000 bales in 1915 in spite of adverse conditions making a total of 145,000 bales. The balance of 20,000 bales should, it is expected, be covered by increased sales at home and in China. With regard to the latter, the decreased crops and the rise in the price of silver if maintained will render the position of the Chinese spinner much less favourable than in 1915, or so it is supposed. Other factors are the rapidly increasing trade in piece-goods and in knitted goods. That the outlook is regarded as promising is shown by the fact that extensions at present planned amount to at least 300,000 spindles. There are now some 2,800,000 spindles in all.

In the export of cotton piece-goods, the effects of the war were favourable to Japan and the mills are reported to have made big profits in the sale of shirtings and drills. From May, 1915, the diminution in stocks in Shanghai created a demand for Japanese goods which increased steadily during the year. The mills, however, adopting the view that prices would go higher, showed no anxiety to push sales. This attitude appears to have been justified by results and prices of shirtings and jeans were maintained at a high level. In the case of the latter, Japanese goods had with difficulty succeeded in obtaining a footing prior to the war, but, as a result of the altered conditions, they assumed a position of some importance. Jeans were also sent, though in small quantities, to India with which a considerable trade in shirtings was done. Japanese mills, therefore, had every reason to be satisfied with their trade in piece-goods; ordinary sheetings and drills have been done in good quantities in the past but the export of shirtings and jeans constitutes an advance of some importance. Besides grey shirtings, bleached and dyed goods were the subject of enquiry. It is reported that at the beginning of 1916 the mills stand in the comfortable position of having sold their output for six months ahead and there is a general impression that the position that they have gained in the cotton piece-goods markets of China and India is one which they will keep.

Two other lines of export are imitation nankeens and cotton flannel. Both of these benefited by the war.

[Note.—1 Kin=about 1½ lbs.; 1 Yen=about 2s. 1d.]

THE FOREIGN TRADE OF JAPAN

The total volume of the import and export trade of Japan in 1914 was yen 1,186,837,186 (£121,564,804), being a decrease of yen 175,054,671 (£17,930,418), or 12.9 per cent. on the total trade of the preceding year. Of this volume the exports amounted to yen 591,101,461 (£60,545,064), showing a decrease of yen 41,358,752 (£4,236,275) or 6.5 per cent. on the figure for the preceding year, but an increase of yen 64,119,619 (£6,567,624), or 12.2 per cent. on that for 1912, while the imports amounted to yen 595,735,725 (£61,019,740), showing a decrease of yen 133,695,919 (£13,694,143), or 18.3 per cent. to the figure for the preceding year and of yen 23,256,452 (£2,382,105), or 3.8 per cent. on that for 1912. If we take the year 1914 as being divided into two periods by the outbreak of the European war, we find that the exportation of raw silk, *habutaye*, cotton yarn and thread, cotton fabrics, copper, coal, and timber was very prosperous during the first seven months, that is, the period prior to the outbreak of war, and showed an increase of yen 31,005,430 (£3,175,810), or 9.2 per cent. on the corresponding period of the preceding year; but during the last five months the effects of the war were felt, and the exportation of the principal articles of export of this country, with the exception of tea, fell off and showed a decrease of yen 72,364,182 (£7,412,085), or 29.5 per cent. on the corresponding period of the preceding year. On account of a falling off in the importation of rice, sugar, worsted, cotton tissues, iron, machinery, and petroleum, there was a decrease of yen 32,946,386 (£3,374,617), or 7.1 per cent. in the first seven months of 1914 compared with the same period of the preceding year; while in the last five months not only was the importation of German and Austrian products suddenly stopped, but the import trade generally was restricted by inconveniences in exchange and communication, and business-men, fearing a financial crisis which is often unavoidable in time of war, refrained from engaging in new enterprises, with the result that there was a falling off in the importation of building materials, raw materials for manufacture, and machinery, thereby causing a further depression in import trade, which was less in those five months than in the corresponding months of the preceding year by yen 100,749,533 (£10,319,526), or 37.6 per cent.

Trade with the Various Countries

The volume of exports to the United States was the largest, the amount exported being yen 196,530,008 (£20,130,008), an increase of yen 12,056,626 (£1,234,930), or 7 per cent. on the preceding year. China came next with direct exports valued at yen 162,370,924 (£16,631,253); but as the amount exported to that country by way of Kwantung Province and Hongkong was by no means inconsiderable, the total volume exported to the republic directly and indirectly did not probably fall short of yen 189,000,000 (£19,358,804), an increase of yen 3,000,000 (£307,283) on the preceding year. Next in point of prosperity came the export trade with Great Britain, France, British India, Italy, and Australia. The export trade with Germany fell off on account of the war by yen 3,169,616 (£324,656), or 24 per cent. when compared with the volume in 1913; but exports to Russia in Asia, on the other hand, rose to yen 10,413,147 (£1,066,593), an increase of yen 6,141,734 (£629,083), or over 140 per cent. on the preceding year.

In import trade the imports from British India take the first place on account of the large importation of raw cotton and rice, the amount being yen 160,324,460 (£16,421,639), which, owing to a falling off last year in the importation of rice, shows a decrease, compared with the preceding year, of yen 12,849,401 (£1,316,132), or 7 per cent. Next in order come the imports amounting to yen 96,771,077 (£9,912,023) from the United States, those

from Great Britain amounting to yen 92,302,307 (£9,454,298), and those from China which came up to yen 58,305,783 (£5,972,118). All these show a decrease on the preceding year; but most marked is the decrease in the imports from Germany and Austria-Hungary, the rate being 34 per cent. in the former and 51 per cent. in the latter; from August direct trade with these two countries was entirely cut off with the exception of importation of goods which had been shipped prior to the outbreak of war and those stored in bonded warehouses.

If we add to the volume of Japan's trade with the various countries the volume of the trade with their colonies and dependencies, we find that imports from Great Britain and its colonies and dependencies amounted to yen 273,247,066 (£27,988,023) and exports thereto to yen 117,896,767 (£12,075,875), making a total of yen 391,143,833 (£40,063,898), or nearly one third of the total foreign trade of Japan. The import and export trade with the United States, Hawaii, and the Philippine Islands amounted to yen 312,394,814 (£31,997,830), and that with China to yen 220,676,707 (£22,603,371), the trade with these three countries and their dependencies coming up altogether to yen 924,215,354 (£94,665,098), or 78 per cent. of Japan's entire foreign trade, so that they hold important positions in her foreign commerce.

Trade at the Commercial Ports

Of the thirty-seven open ports of the country, Yokohama exported yen 269,452,464 (£27,599,351), or 45 per cent. of the total export trade; the raw silk and *habutaye* exported from the country passed almost entirely through this port, and a large quantity of other silk fabrics and silk goods was shipped from it, for which reasons its exports exceeded those of other ports. Next to it in volume of exports came Kobe with yen 167,522,636 (£17,158,930), Osaka with yen 19,965,938 (£2,045,062), Shimidzu with yen 7,963,143 (£815,645), Mike with yen 6,290,997 (£644,371), and Wakamatsu with yen 6,169,469 (£631,923). The principal exports of Kobe were cotton yarn and thread and other cotton goods, matches, copper, and straw plait; Osaka exported various goods for Chinese consumption; Shimidzu having behind it the chief tea district of the country, its principal export was manufactured tea; and Mike and Wakamatsu exported little else than coal.

In the volume of imports, Kobe held as usual the first place, the amount for 1914 being yen 281,959,911 (£28,880,458), or over 47 per cent. of the total import trade; Yokohama came next with yen 178,781,276 (£18,312,125), the total imports and exports of the two ports being yen 897,716,287 (£91,950,864), or more than 75 per cent. of the total trade of the country. After Yokohama in volume of imports came Osaka with yen 41,406,054 (£4,241,120), Moji with yen 32,274,349 (£3,305,782), Yokkaichi with yen 21,934,996 (£2,246,748), and Nagasaki with yen 13,001,368 (£1,331,698). On account of the general depression of trade, the imports and exports of the various ports in 1914 showed on the whole a falling off when compared with the figures for the preceding year, with the exception of Tsuruga, Shimidzu, and Nagoya, which showed an increase on the preceding year, the first on account of a great increase in its export trade with Russia, the second on account of a brisk export of tea to the United States, and the third on account of a flourishing trade in cotton yarn and fabrics.

Entry and Clearance of Vessels

The number of vessels engaged in foreign trade which entered or cleared from the open ports of the country in 1914 was 19,565, with an aggregate tonnage of 47,192,489 tons, of which steamers numbered 18,973 with an

aggregate tonnage of 47,098,639 tons, being a decrease, compared with the preceding year, of 841 vessels, or 4.2 per cent. and 2,392,578 tons, or 4.8 per cent. Of these vessels, Japanese steamers numbered 12,713, with an aggregate tonnage of 23,566,448 tons, being an increase on the preceding year of 188 vessels and 426,544 tons; the tonnage of Japanese steamers amounted to 54 per cent. of the total steam tonnage being an increase on the preceding year of 3 per cent. Foreign steamers, on the other hand, fell from 7,289 vessels and 24,351,303 tons in 1913 to 6,260 vessels and 21,532,181 tons in 1914, their tonnage declining in these two years from 49 to 46 per cent. of the total steam tonnage. This falling off in foreign shipping was, it need hardly be said, due to the European war. The German and Austrian vessels having shortly after the outbreak of hostilities been swept out of the Eastern seas, there was a marked decrease in their number in 1914 as compared with the preceding year, the decline in German steamers being 225 vessels and 795,671 tons, a decrease of 24 per cent. in tonnage and that in Austrian steamers 30 vessels and 114,964 tons, a decrease of 39 per cent. in tonnage. British steamers also showed a decrease of 583 vessels and 1,379,259 tons, a falling off of 9.4 per cent. in tonnage and French steamers similarly fell off by 41 vessels and 158,105 tons, a decrease of 19 per cent. in tonnage, while American steamers increased by two vessels and decreased by 83,502 tons or 3.2 per cent. The Netherlands and Swedish shipping also showed a decrease.

THE KOREAN TARIFF

The Yokohama Chamber of Commerce in an extraordinary general meeting passed two memorials to be presented to the Premier and the Minister of Agriculture and Commerce. One of these proposes the abolition of the existing customs tariff of Korea, and the other the establishment of a trade information bureau in the Department of Commerce.

The tariff regulations in Korea are those which were in force in pre-annexation days. This tariff the Japanese government declared at the time of annexation would be in force for ten years. According to the resolution, the members of the Yokohama Chamber of Commerce understand that the Japanese government made the promise for fear that the abolition of the Korean tariff might cause anxiety in countries which had trade relations with Korea.

Six years have now passed since the annexation, and the economic relations between Japan and Korea have undergone a considerable change. The war has also worked a remarkable change in the economic condition of Japan. It is argued, therefore, that it is essentially necessary to place the economic markets of Japan and Korea under one and the same law, and to remove all barriers from the economic and trade relations between the two countries. The Yokohama Chamber of Commerce wishes that the government would abolish the existing tariff system in Korea, and adopt there the same tariff system as is in force in Japan.

In the other memorial the Yokohama organization proposes to establish a bureau or section in the Department of Agriculture and Commerce, such as the one the British Board of Trade has at present; this bureau or section to collect all necessary information from all parts of the world and help Japanese traders in their work of extending trade with foreign countries both during and after the war.

ENGINEERING, FINANCIAL AND INDUSTRIAL NEWS

RAILWAYS

Manila Railroad Purchase.—Commissioner Clyde A. DeWitt of the Board of Public Utilities is in the United States, with authority from the governor general to carry on negotiations for completing the purchase of the Manila Railroad Company's lines on Luzon. It will be remembered that the memorandum agreement between the chief executive and the president of the local company, which outlined the terms governing the transaction, summarised in *The Far Eastern Review* for February, was signed late last fall and formally ratified by the legislature in February, the latter body conferring upon the governor general the right to negotiate the purchase for the government of the Philippine Islands. The deal is now practically closed, and while the final papers will probably be signed in Manila, it is understood that there are certain formalities remaining which require the presence of representatives of both contracting parties. Mr. DeWitt, under the authorization just granted him, will be empowered to act for Governor General Harrison in conference with the railroad company's directors in the United States.

S. M. R. Traffic Returns.—The South Manchuria Railway traffic returns for March totalled Y2,405,397.35, a daily average of Y77,593.46, and a decrease of Y16,025.48 per day from the corresponding month last year. The total traffic receipts for the fiscal year, ending in March, amounted to Y24,653,742.62, and the net increase on the preceding fiscal year decreased to the nominal sum of Y35,619.28.

The Railway's calculation of the increase for the last fiscal year is at a wide variance from the above. According to their calculation, the total traffic receipts for the fiscal year amounted to Y23,737,817.41 as against Y23,216,721.52 for the preceding fiscal year, yielding an increase for the last fiscal year to the amount of Y521,095.89. The comparison of the detailed figures is as follows:—

	Fiscal year	
	1915	Increase over 1914
No. of passengers ...	3,661,824	44,277
Passenger receipts ... Y	4,761,902	594,734
Goods tonnage ...	5,843,139	157,191
Goods receipts ...	17,574,906	24,756
Warehouse receipts ...	244,580	67,441
Sundry receipts ...	1,156,428	34,162
	Y23,737,817	521,095

The S. M. R. Co. estimates for the current fiscal year as approved by the Government under date of April 20, are as under:—

	Receipts Expenditures	
	Yen	Yen
Rail- Main & Branch		
way Lines ...	22,180,254	7,385,285
Mukden-Antung		
Line ...	2,103,008	1,388,520
Shipping ...	1,466,937	1,447,226
Electricity ...	1,192,425	768,732
Gas ...	267,867	152,833
Harbour ...	2,376,048	2,141,942
Mining ...	14,849,049	13,135,674
Hotels ...	138,237	309,886
Railway Area ...	1,307,742	2,716,121
Sundry profit & loss ...	50,000	200,000
Interest ...	335,000	5,808,510
General expenses ...	—	340,047
Emergency fund ...	—	501,000
Total ...	46,367,567	39,469,582

Net profit 6,897,985

Y46,367,567 Y46,367,567

Shantung Railway Returns.—The monthly traffic receipts of the Shantung Railway for February amounted to S. Y310,000, giving a daily average of about S. Y10,700. Compared with February, 1913, under the German regime, the daily average was about Y9,000 and that for the same month in the succeeding year amounted to about Y12,000. The aggregate returns since the Line passed under Japanese management reached about S. Y3,500,000, promising to attain S. Y4,000,000 by the end of the present fiscal year.

The estimates of expenditures for the Railway during the current fiscal year amount to Y3,300,000. Among the new undertakings may be counted the construction of a medical station at Tsinan, a Primary School at Tzuchuan (at which place a warehouse belonging to the Tzuchuan Colliery is now doing duty as the school-house), and housing accommodation for the Railway people along the line.

Siam Railway Receipts.—Approximate receipts in Ticals for February from the Broad gauge (872 klm.) lines compared with actual receipts of February, 1915 (Siam Calendar 2457) is as follows:

	Year 2458	Year 2457
Passengers	Tc. 358000.	Tc. 250849.
Goods	188000.	224251.
Others	4100.	3699.
Total	Tc. 550400.	Tc. 478799.
April to Feb.	Tc. 4,252,744.	Tc. 3,887,914.

The considerable fluctuation in Traffic Receipts is due to the Phrabad and Phrathen festivities falling in the month of January last year and Feb. this year.

Novel Railroad Bridge for Java.—A bridge built for the Holland government railroad over the Serajoe River in Java has been made complete in the shops in Holland, and so carefully has this been done that no field work will be required in erecting the steel structure other than that of connecting the members. The bridge site is far from any kind of shop facilities, and to make sure that the structure would go together properly it was first erected as carefully as if on its permanent location, in the yards of the manufacturing company in Holland. Following this it was taken down and shipped by steamer to Java. The bridge is of unusual design, consisting of three arched spans of steel connecting with short, straight trusses over the piers. It has a total length of 698 ft. 10 in., and weighs 580 tons. It is designed to carry a single-track railroad having a gauge of 3½ feet.

Japanese Railway Estimates.—According to the practical estimates of the Imperial Japanese Government Railways for the next fiscal year, as adopted at the recent conference of the Directors of the District Departments, the aggregate receipts were put at Y122,020,702 and the aggregate expenditures at Y100,874,818, the net profit amounting to Y21,145,884.

Double Track Open Soon.—The double track line, which is being built between Ofuna

junction, on the Tokaido main line, and Taura, near Yokosuka, is nearly completed and will be open for traffic by the end of May. The work of improvement between Yokosuka and Taura, which was planned to be made this time, was postponed owing to the increasing cost of materials.

Canton-Wuchang Line.—On the Canton-Wuchang Railway work is proceeding apace. The workmen's train runs daily now to within a few li of Sienlin. A new extra-mural Wuchang will be built within a few years as it is now seen that the full running of the railway will necessitate wide expansion of the existing city.

Tasmania Railway Project.—Recently an offer was made by two of the leading business men of Hobart to construct a railway from Hobart to the west coast of Tasmania. There has been a demand for this railway for a number of years, but as the State of Tasmania had not been in a financial position to construct it, some years ago it offered certain grants to a syndicate as a bonus for the work. The syndicate did not take advantage of this offer, and now the business men mentioned have offered to construct the road if the Government will give them the same terms that were offered to the syndicate. The railway would develop a large and rich section of Tasmania. It would be about 140 miles long, and would cost between Gold \$4,000,000 and \$5,000,000. An Australian firm had offered to build the road for Gold \$30,000 per mile for the old syndicate, if the latter would furnish the rails.

Canton-Hankow Railway Bridges.—The contract for the supply of bridge girders for the Canton-Hankow Railway (Hupei-Hunan section), a part of the Hukuang Loan Railways, has been awarded to Messrs. Jardine, Matheson and Co. (Ltd.), and the Yangtze Engineering Works (Ltd.). The Yangtze Engineering Works (Ltd.), a Chinese concern, has been awarded the contract for the supply of 209.7 tons of the girders, short spans, at a total bid of Gold \$23,890, delivery to be completed in 5 months. Messrs. Jardine, Matheson and Co. (Ltd.), tendering on behalf of the United States Steel Products Co., were awarded a contract for the supply of 18 spans of 150 feet and 6 spans of 200 feet at an aggregate tender of Gold \$475,304, delivery to be made not later than September 30, 1916.

The time of delivery was a factor in awarding the contract, as it was the desire of the railway to complete the line from Hankow to Changsha during the current year. It was specified that the bridges should be shop erected, which is contrary to the best practice prevailing in the United States. Under the resolutions of the May conference of 1915, American manufacturers are entitled to tender for all bridges provided for by the Hukuang Loan, under the recognized standard practice prevailing in the United States. Therefore a protest was filed against the specifications, and in the award of the contract, the American manufacturers agreed to shop erect one span of each class.

New Road to Open Mongolia.—There are three inlets into Mongolia: one from Changchun going up the Sungari to Taonanfu; the second from Ssuninghai on the South Manchuria Railway to Kailu via Chengchiatun; the

third from Jehol to Chihfeng. The proposed construction of the Ssuping-kai-Chengchiatun Railway, although only 53 miles long, is an initial step of great commercial importance taken for the opening-up of the neglected Mongolian resources. Seen from an agricultural point of view, the arable land in Eastern Mongolia includes a fertile country in the Taoerh Valley, the region in the Upper Liao Valley, and the zone about Chihfeng and Wutancheng, the total area amounting roughly to 9,861,000,000 *tsubo* (about 8,200,000 acres). All this vast area is already under cultivation. Land available for cultivation or for stock-raising is estimated at 21,000,000,000 *tsubo* (about 17,500,000 acres).

These lands produce an immense quantity of produce like beans, kaoliang, and millet for principal products. One-third of the produce may be put down as for exportation, and the new Ssuping-kai-Chengchiatun Line will play an active part in carrying the export produce. Then there are live stock and accessories, including cattle, horses and sheep, their hides and skins, hair and wool, etc. In addition, the fish to be caught in the Liao, the Taoerh, etc., together with soda and other minerals may be taken into reckoning.

Although the ¥5,000,000 Ssuping-kai-Chengchiatun Railway Loan has already been issued in Japan, (see page 439 this issue), the actual construction work is likely to be deferred to next year owing to insufficient supply of materials.

From a reliable source, it is learned that the survey work will be started shortly and will be completed by the end of June. Construction work may begin immediately afterwards.

Extension of Area at Fushun.—The Railway Area included in the Fushun Collieries comprises about 2,500,000 *tsubo* (about 2,100 acres) at present. An extension of the same Area has become necessary to the amount of about 1,100,000 *tsubo* for use as the ground for gathering sand for a sand-flushing enterprise, etc. Negotiations with the Prefect of Fushun in the matter have been taken up.

SHIPPING

New Pacific Mail Liners.—The Pacific Mail Steamship company has bought the Dutch liners Venezuela, Ecuador, and Colombia for use in the Pacific trade. The purchase price is not known. The Venezuela, Ecuador and Colombia are new vessels, completed in the latter part of 1915 for the Royal West Indian Mail line of Holland. They each have a registered tonnage of about 5,500 gross and 3,500 net. The Venezuela and Colombia were built at Amsterdam and the Ecuador at Flushing. The Venezuela is slightly larger than the other two.

Hongkong Shipyards Busy.—The large shipyards of Hongkong, under certain conditions, can build ships as cheaply as any yards in the world according to a report by U. S. Consul General Anderson. Usually the necessity of obtaining much of the steel plate work from abroad serves to counteract many advantages the industry has in Hongkong, but despite the high freight rates on steel the Hongkong yards are now building ships in competition with the shipyards of Europe. All the shipyards in Hongkong capable of building ocean vessels have work to their full capacity. In the two larger yards fourteen new vessels are now under construction including three new ships for the Blue Funnel Line and three new ships for the China Navigation Company which are on the ways at the yard of the Kaikoo Dockyard and Engineering Company, while the yard of the

Hongkong and Whampoa Dock Company (Ltd.), is busy with six new ships for Messrs. Brunsgaard Kiosterud & Co. and two for Messrs. Hans Kiaer & Co., of Drammen, Norway. Two other vessels of the same class will be started as soon as room can be made for them and three others are contracted for. There are also under construction two vessels for the Siam Steamship Company.

According to reports from Siam, the last named vessels will be built to British Lloyd's highest class, carry a deadweight of 1,000 tons and run 10½ knots, having accommodations for 20 first-class and 8 second-class passengers. The boats are expected to be ready in 12 months. The company now has a fleet of 5 steamers for the trade on the west coast of the Gulf of Siam.

New Spanish Mail Liner.—Plans and specifications have been approved for the construction of a new 11,000-ton passenger and freight steamer for the Compania Transatlantica for use on the Liverpool, Barcelona and Manila run. The construction of the new steamer will begin in April at the company's shipyards at Cadiz and under favourable conditions the new liner should be ready for her maiden voyage the latter part of this year.

Panama Canal Open Again.—The American Ambassador officially notified the Japanese government on April 4 vessels below 30 feet draught would be able to pass through the Panama Canal after April 15, but that the passage of ships might be delayed somewhat owing to the dredging work which may be done later to widen or deepen the canal.

Merchant Marine.—According to reports made the Japanese Department of Commerce by 39 shipyards, 300 vessels (with a gross tonnage exceeding 1,000,000 tons) are under construction. Of these vessels 58 are government ships, 56 are oil tank steamers, and 31 are ocean going vessels.

Furukawa to Ship Own Coal.—The Furukawa Mining Company has opened a shipping department. The ships to be used in the new department will be the Tenno Maru, 3,300 tons, recently launched, the Kalo Maru, 3,000 tons, to be finished in August, and six other chartered vessels, including the Osaka Maru, Yodo Maru, Prometheus, Simon and one other foreign steamer. The Company will run these steamers between Kobe and Shanghai and Hongkong mostly for the transportation of coal.

New Nagasaki Wharf.—The Nagasaki Customs authorities have planned the construction of a wharf at Deshima, capable of accommodating a 5,000-ton steamer, or if used for smaller vessels two of 3,000 tons or three of 1,000 tons. The cost is estimated at Yen 1,101,388, including the dredging operations and other necessary work. The construction will take two years. It is stated that the Government will be approached by the Customs authorities and also by the Municipality for an appropriation.

Japan's Coastwise Subsidies.—The renewal of the Government's subsidies to the different coasting services for the two years ending on March 31st, 1918, has been announced as follows:—

To the Nanyo Yusen Kaisha (South Seas Mail Steamship Co.):—¥220,000 for the South Seas Line and the Javanese Line.

To the Nisshin Kisen Kaisha:—¥538,000 for the China Line.

To the Osaka Shosen Kaisha:—¥100,000 for the Dairen Line, ¥157,000 for the Direct

Vladivostok Line, ¥47,000 for the Circuitous Vladivostok Line.

To the Nippon Kisen Kaisha:—¥47,500 for the Kabafuto Line.

An annual subsidy of ¥40,000 has been granted to the O. S. K. steamer *Taigi Maru* which is to ply between Kagoshima and Nawa (the capital of the Loochoos) on condition that not fewer than six trips per month be undertaken.

Japan Traders Suggestions.—The Japan Foreign Trade Association, has petitioned the government authorities to increase the number of vessels, especially on the American and Indian lines. The association presented four suggestions to the government: The government should allow the shipping companies to increase their rates in a degree that would not disturb foreign trade and let them increase the number of boats.

The duty of the Japanese navy is not confined to the defence of the country, but it is its duty to protect and improve our trade. Let old warships be sold and used for the transportation of merchandise. Naval shipbuilding yards should be utilized as much as possible for the building of merchant boats.

Japan's Shipyards Hampered.—The British Government's prohibition of exports of pig-iron and steel railway materials and shipbuilding materials, has caused a panic among Japanese merchants and shipbuilding firms. Orders issued by various shipbuilding yards in Japan for material for constructing vessels amounted at the end of 1915 to 107,000 tons. Of this quantity 46,000 tons were ordered from the United States, 30,000 tons from England, and 25,000 tons from the various steel and iron foundries in Japan. Because the shipment of steel from England is gradually becoming difficult, it is feared that the building yards will be obliged to suspend work partially. As a result of recent negotiations between the Government and the representatives of the shipbuilding yards, it has been arranged that the authorities, as far as possible, shall encourage the manufacture of steel of various kinds in Japan.

Investigations made by the Department of Communications show that 50 steamers, representing 188,000 tons, are due to be completed in various yards in Japan during the course of this year. Owing, however, to the scarcity of steel in the Japanese market, and the difficulty of importing the material, shipbuilders are now seriously handicapped, and are reported to be declining orders. Mr. Kojiro Matsukata, president of the Kawasaki Dockyard, has sailed for Europe via America to buy materials for shipbuilding in New York and to consult with the different iron factories as to the manner of shipping the goods already ordered. Despite the freight congestion, he says these goods must be sent to the eastern coast of America and shipped from there owing to the shortage of steamers on the Pacific.

Mr. Matsukata also will go to England to negotiate with iron manufacturers there as well as the British government as to supplying Japan with iron materials. In England he will represent other Japanese business men in negotiating for a supply of iron materials which are now absolutely necessary if Japan's ambitious program of shipbuilding is to go on.

Japan to build Warships.—With the appropriation passed by the Imperial Diet at the last session, the Imperial Navy will soon begin the construction of one battleship, two cruisers, one destroyer, and three submarines. The battleship is to be of 32,000 tons; the two cruisers of 3,500 tons each; the destroyer of 1,200 tons, and the three submarines of 800 tons each. The battleship and three submarines are all to be built at the Naval Dockyard at Kure, one cruiser at the Naval Dockyard at

Yokosuka, another cruiser at the Naval Dockyard at Saseho, and the destroyer at the Naval Dockyard at Maesuru.

Japan's Merchant Marine.—The Department of Communications announced on April 5 the result of an investigation of Japanese steamships and sailing vessels. The figures given are the number of vessels on February 29, 1916.

Tonnage	Number	Total Tonnage
20 to 100 ...	1,035	47,142
100 to 300 ...	436	69,500
300 to 500 ...	90	36,485
500 to 1,000 ...	149	109,272
1,000 to 2,000 ...	127	192,308
2,000 to 3,000 ...	122	300,425
3,000 to 4,000 ...	80	267,108
4,000 to 5,000 ...	27	119,052
5,000 to 6,000 ...	31	175,391
6,000 to 7,000 ...	13	82,078
7,000 to 8,000 ...	10	75,811
8,000 to 10,000 ...	6	57,052
Over 10,000 ...	5	61,672
Total... ..	2,131	1,602,286

The number and tonnage of the sailing ships are as follows:—

Tonnage	Number	Total Tonnage
20 to 100 ...	7,240	343,955
100 to 300 ...	1,491	197,687
300 to 500 ...	5	1,913
Over 2,000 ...	1	2,439
Total	8,737	545,994

New Japanese Steamers.—According to the Department of Communications, the steamers that are to be launched during April and May are the Uruga Maru No. 3, of 2,150 tons, at the Uruga Dock, a steamer of 2,800 tons, a sister ship of the Akita Maru, at the Nagasaki Dock. Besides, two more steamers of 3,200 tons each are under construction at the Osaka Iron Foundry Dockyard, and one steamer of 4,600 tons at the Kawasaki Dockyard.

Formosa-Manila-Java Line.—The Osaka Shosen Kaisha has received a charter from the Formosan government to open a new line beginning April 25. The vessels will call at Manila, Java, Sumatra, Borneo, Singapore and other ports. Tea and rice are the principal articles to be exported from Formosa.

T. K. K's. Pretentious Program.—The Toyo Kisen Kaisha is planning very extensive additions to its fleet. Specifications are ready for eight large cargo steamers which will be launched next year and which will resemble somewhat the "T" class of N.Y.K. freight vessels. In addition to this, the plans are now being drawn for two large passenger vessels slightly larger than the Empress of Russia and the Empress of Asia. All of these vessels will be built in Japan. Two of the freight vessels will be built at the Uruga Dockyards. Some of the other vessels will be built by the new dockyard to be started by Mr. Asano and his associates at Yokohama. The plan of the T. K. K. is to have five first class passenger ships on the trans-Pacific service. The fleet would be composed of the Shinyo Maru, the Tenyo Maru, the two new ships which are about to be built, and the Anyo Maru which is on the South American run. In addition to this, they would have the Persia and the Nippon Maru as intermediates. Two engineers left five months ago for England with plans of the new freight boats for approval by Lloyds.

T. K. K. Yokohama Dockyard.—Negotiations between Mr. Asano, president of the T. K. K., and the directors of the Yokohama Dock

have gone ahead monthly and a formal contract will be made in a few days. Mr. S. Asano has already selected experts for building the new shipbuilding yard and the construction of slips and other necessary preparations will be started immediately after the contract is signed. The new company which is called the Yokohama Shipbuilding and Dock Company was fully registered on April 18 at the Yokohama District Court, with a capital of 3,750,000 yen. Mr. Asano Soichiro is president and Messrs. K. Sudzuki, S. Hara, R. Kato and M. Maeda, directors. The payment of 12.50 yen a share was made last Thursday and the company has 937,500 Yen as working Capital. As soon as sanction is given by the Yokohama city assembly, which was to be held on 20th inst. the new company will start the work of reclamation. Shipbuilding work will be commenced within this year.

All the machinery and material for the new dockyard were ordered four months ago and the newly formed company is awaiting only a suitable site. The plan is to construct five or six slips at once but the directors of the company wish a site that will permit of extensions and want space for a dozen slips. The new dockyard will employ 5,000 men and in time probably double this number. An official of the company said that it would require only about two months to build the slips after the site had been decided upon and the preparatory work on the site had been finished. This preliminary work, it is estimated, would take only two or three months. They believe that they could be ready for building operations in five or six months time, and that they would be launching the new boats ordered [by] the T. K. K. during the coming year.

P. I. Officials Grant-New Rates.—Despite a recent decision by the Philippine supreme Court which declared that the Public Utilities Board has not the right to require shipowners to present to it their operating statements, the board has ordered other members of the Philippine Shipowners Association who had not yet been granted the authority to carry into effect the rate increase of 25 per cent, to submit their statements of operations so as to enable the board to decide intelligently the justice and reasonability of the increase in rates they were seeking. Many protests have been filed against the proposed increase.

P. I. Shipping Bill.—Following the example of the U.S. Congress, the Philippine Legislature has passed an act providing for a Board of Marine Examiners, for the examining and licensing of watch officers and engineers on Philippine vessels in the coastwise trade and for the high seas, license fees, compensation, and penalties in certain cases. In the passing of this act the legislature has interfered with previous legislation which had worked admirably; which had proved efficient; and had also given satisfactory results. Under the present amended act all vessels under Philippine registry engaged in the major coastwise trade, will be compelled to carry extra officers. It does not affect steamers of 1,500 tons and over but steam vessels under 250 tons, which, owing to their limited capacity for freight carrying and passengers will naturally feel the extra expense entailed to a considerable extent. It is the opinion of the shipping fraternity here that the amended act puts an extra 25 per cent on to the operating expenses of the vessels; and that unless corresponding rates are permitted to be charged, the ship owners will be badly hit. The voice of the traveling public, however, has not been raised in protest but has rather approved the new requirements.

Philippines Tonnage Act.—The new act regulating foreign shipping which goes into effect on July 1, 1916, is as follows:—

At all ports and places in the Philippine Islands, there shall be collected from any

vessel coming from or going to a place outside of the territory of the Philippine Islands, irrespective of nationality in accordance with regulations issued by the Insular Collector of Customs, with the approval of the Secretary of Finance and Justice, twelve and a half centavos per net ton, as expressed in her certificate of registry, or thirty-five centavos (17.5 cents gold) per thousand kilogrammes (2,204 pounds) on merchandise discharged or laden, in Philippine ports, at the option of the master or the consignee of the vessel. Exemptions are vessels not discharging or lading cargo and discharging and landing only passengers and their baggage. Vessels belonging to the government of the United States and to foreign governments, or chartered by the same, if not engaged in trade. Vessels in distress; and Yachts of the United States, the Philippine Islands, or any nation which imposes no tonnage or equivalent taxes on United States and Philippine yachts.

FINANCE

China's Salt Revenue.—A comparative statement of receipts by the Group banks has been issued by the Chief Inspectorate of the Chinese Government Salt Revenue Department to show the proceeds of Salt Revenue received from all offices during the 4 months ended the 31st March, 1915 and 1916 respectively.

Total for the 4 months ended 31st	
March, 1915	\$24,420,000
Total for the 4 months ended 31st	
March, 1916	\$27,384,000

Increase during latter period	\$2,964,000
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Balance in Group Banks at 31st	
March, 1916	\$19,298,000

Release to order of the Chinese Government authorized by the Chief Inspectors on 4th. April, 1916 ...	\$5,500,000
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Balance left in Group Banks after payment of release (exclusive of Salt Revenue Receipts during April, 1916)	\$13,798,000
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Japan's Domestic Loan.—The Japanese government has issued regulations for the new issue of railway bonds to the amount of 40,000,000 yen. According to the Vice-Minister of Finance, the new bonds will be redeemed within 15 years, no unredeemable period fixed for them. The interest is 5 per cent. per annum, the issue value 95 yen per 100 yen. As the underwriting banks are to get 50 sen per 100 yen, the net proceeds to the government will be 94.50 yen per 100 yen. Public subscriptions were received between the 21st and 25th April, the guarantee money to be paid in at the time of subscription, being 5 yen per 100. A similar payment is to be made on May 1st, the amount of instalment being 5 yen per 100 yen. The second instalment 50 yen to be paid in on the 15th May, the third instalment 40 yen on the 15th June. The yields of the new loan will be 5.68 per cent. per annum. Compared with the railway bonds issued last autumn which yield 5.71 per cent, the new bonds can be said to be a successful arrangement for the government.

Municipal Debts of Japan.—According to investigations of the Home Office, the outstanding local debt in Japan at the end of 1915 was 326,602,113 yen in all, of which Tokyo, Kyoto, Osaka, Yokohama and Nagoya shared 177,739,247 yen. The Debts of these municipalities are as follows:—

Tokyo Utilities' Loan, 14,580,000; Electric Works' Loan, 90,098,500; Total, 104,678,500.

KYOTO

Public Utilities' Loan	17,550,000
Public, Additional	1,950,000

Total... ..	19,500,000
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OSAKA

Harbor Works' Loan	3,026,000
Electric and Waterworks' Loan	30,220,000

Total	33,246,000
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YOKOHAMA

Waterworks' Loan	617,400
Public Utilities' Loan	3,108,800
Gas Works' Loan	294,100
2nd Waterworks' Loan	7,000,000
2nd Gas Works' Loan... ..	2,178,447

Total	12,198,747
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NAGOYA

Public Utilities' Loan... ..	7,816,000
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Japan and German War Loot.—According to the Foreign Office, Japanese specie deposited in the Imperial Bank in Germany amounting to 5,000,000 marks, is to be seized by the German government, or held by a certain process of law, in retaliation for the retention of the German specie to the amount of 1,500,000 taels which was seized by the Japanese at Tsingtau.

The Japanese government claims that the specie in Germany in question belongs partly to the Bank of Japan and partly to the Yokohama Specie Bank. If Germany holds on to the 2,500,000 yen while Japan has taken 1,500,000 yen, there is a balance of 1,000,000 yen in favor of the Germans. But it is understood that several other sums taken at Tsingtau by Japan may offset the difference.

British Buy Japanese Bonds.—According to London advices to the Bank of Japan, the British Government has begun purchasing 1st and 2nd 4½ per cent. Japanese Sterling Bonds held by Britons. This is believed to be for the regulation of Anglo-American exchange, says the *Japan Chronicle*. For this end Japanese 4½ per cent. Sterling Bonds can fulfil the same function as American securities because payment of interest and reimbursement can be made in the United States according to the agreement made at the time of issue. The same conditions apply to Japanese second 4 per cent. and 5 per cent. bonds, but of them nothing particular is reported. The British purchase of 1st and 2nd 4½ per cent. bonds may have salutary effect upon the London market for Japanese bonds, which has been on the down grade for some time past.

Japan's Specie Reserve Increasing.—Owing to the favorable balance of foreign trade, Japan's specie holdings since last year have been increasing, but for the first three months of this year there was a decrease, the lowest figures being 493,000,000 yen. This decrease was due to the purchase of bonds for redemption and to the payment of interest on foreign debts. The loan redemption operation was, however, stopped at the end of March, and the payment of interest on foreign loans is considerably lessened. The country's holding of specie has again begun to increase, the figures at the end of March being 497,000,000 yen, or an increase of 4,000,000 yen compared with the lowest figures in the first quarter of the year. In April, the increase was rather conspicuous, reaching 499,500,000 yen in the first 10 days of the month. In the second decade of the month, the figure reached 510,000,000 yen, an increase of 17,000,000 yen compared with the lowest level

of March. The specie is held in the following institutions: 390,000,000 by the Bank of Japan, of which 120,000,000 yen belongs to the Government. Some 170,000,000 yen is in Japan and of the 340,000,000 yen held abroad, 40,000,000 yen is in New York, the rest being in London.

Japan's Customs Revenue.—The customs revenue of Japan for March was 2,631,387 yen, and the total revenue from customs business for the fiscal year ending March 31 is 32,682,034 yen. This is a decrease of about 6,000,000 yen from the government's estimates of 39,987,000 yen for the year. Compared with the previous fiscal year there has been a decrease of 13,539,764 yen.

Yokohama Collects Taxes.—The Yokohama municipal authorities have announced that 1,073,088 yen in municipal taxes were collected during the fiscal year from April 1, 1915, to March 30, 1916, out of the total municipal taxes assessed of 1,329,676 yen. Of the total, 1,242,625 yen were imposed on Japanese, while the rest, 87,051 yen, were on foreigners. The total amount outstanding against both Japanese and foreigners is 256,888 yen.

Financial Independence of Chosen.—The Government General of Chosen, with a view to attaining its financial independence in the fiscal year of 1919, raised the rates of the land and tobacco taxes during the last fiscal year and has now decided to raise the sake-brewing and registration taxes and to levy income taxes on the Japanese residents from the current fiscal year.

The Government-General has been deriving Y13,200,000 from the Central Government which has now cut its annual grant to Y10,000,000.

P. I. Sugar Loans Extended.—Governor General Harrison has completed arrangements whereby the P2,000,000 of government funds loaned to Negros sugar planters through the Bank of the Philippine Islands will still be available after August 1, the date on which the loans made fall due. The funds in question are loaned by the government to the bank at the rate of two per cent a year and the bank relays the money to the sugar planters of Iloilo and Negros at eight per cent a year on the security of their crops, all the risk involved being taken by the bank.

Owing to the difficulty of disposing of sugar under present conditions, the governor general was asked to make arrangements to the end that the bank might extend the loans made, and that institution has now been notified that a reasonable extension of time will prove acceptable to the government. The term of extension has not been fixed but it is believed that two or three months will prove sufficient to enable the sugar men to dispose of their product under favorable conditions.

Philippine Customs Decrease.—A falling off of P153,980.69, as compared with the corresponding month last year, is shown in the statement of customs collections for the five ports of entry of the Philippines during March. This amount is the total decrease in all the ports of entry. Manila is responsible for P125,164.80, Iloilo for P11,520.78, Cebu for P7,897.96, Zamboanga for P4,905.32, and Jolo for P4,491.83 of the decrease. The collections for March last year were P897,025.89 in Manila, P138,350.58 in Iloilo, P98,535.14 in Cebu, P14,360.44 in Zamboanga, and P18,849.25 in Jolo while this year they were P771,861.09 for Manila, P126,829.80 for Iloilo, P90,637.18 for Cebu, P9,455.12 for Zamboanga, and P14,357.43 for Jolo.

P. I. Revenue Increase.—Philippine internal revenue collections on imported mer-

chandise for March show P65,398.81 on the credit side of the balance sheet as compared with the collections for the same month last year, the total for all ports amounting last month to P168,054.96 as compared with P102,744.22 for the corresponding month last year.

Tsingtau Customs Receipts.—After the outbreak of the Siege War about Kiaochow in Summer of 1914, the receipts of the Tsingtau Customs for the latter half of that year amounted to only 98,000 taels. The returns for January, 1915, stood between 30,000 and 40,000 taels, gradually increasing in August to 91,444 taels. After the reopening of the Chinese Maritime Customs with Mr. M. Tachibana for Commissioner, the figures rose steadily to 95,000 taels for September, 96,000 taels for October, 98,000 taels for November, and 160,000 taels for December, which last total compares not badly with 168,000 taels for December, 1913, under the German regime. The unsettled state of the country affected the receipts for January, to which month 140,000 taels are credited, the February receipts further decreasing to 120,000 taels.

MINES AND METALS

Chinese to Develop Mines.—The action of the Chinese Central Government in creating the position of Superintendent of Mines of Hupeh Province to develop the mineral resources of the Province has brought forth some criticism from H.B.M.'s Pro-Consul J. C. Hill of Hankow. It is well known that Hupeh is rich in iron, coal, lead, and copper, and it is anticipated that antimony, silver, and possibly other minerals, can be found in paying quantities. The new superintendent intends to begin a systematic campaign of prospecting and locating, in the first instance, copper and silver mines, and two Chinese mining engineers, who were educated in Belgium, have been employed. The plan seems to be, so far as determined upon, to locate the mines and develop them on behalf of the government, selling the ores to foreigners who will have, at the present time at any rate, no interest in the mines.

According to a report by Pro-consul Hill it is laid down in a recent set of rules issued by the Hupeh provincial government that owners of mining land must, under pain of severe punishment, obtain official sanction before seeking to raise capital for the development of their property, and no proposal for the investment of foreign capital will be considered until the authorities have satisfied themselves that the funds required cannot be procured from the provincial government. Official sanction is likewise required in the case of all contracts for the sale of the output of a mine to foreigners, even when the working of the mine still remains in Chinese hands.

The superintendent selected, Mr. Kao Sung Ju, has held a number of positions of honor and trust, as under the Manchu reign he was Superintendent of Education, as well as Superintendent of Industry, of Hupeh, and is now director of the Hupeh Government Cash Bank, and codirector of Hupeh Government Mint. His office will be at Wuchang. Mr. Kao has stated that he would employ an efficient foreign mining engineer, when prospecting has been completed, for the purpose of developing the mines.

To Open Chihli Copper Mine.—According to Chinese press reports permission has been obtained from the ministry of Agriculture and Commerce by a wealthy merchant named Sun Yu-chung for the operation of a copper mine in the vicinity of Hsianghohsien, Chihli, with an initial capital of \$100,000.

Mukden Foundry Co.—The Yihoshun Foundry, which was established at Mukden last September, has been renamed the Mukden Foundry Co., and will be reorganized into a share stock company on a capital of Silver Y50,000. For material Penchihiu iron will be employed. Electricity is used as power. Stoves, agricultural implements, brakes, wheels, carpenters' tools, household utensils, etc., are being manufactured. The prices of the products are considerably lower than Japanese imports of similar quality.

Lead Mine on Chia River.—On the upper Chia River exists a mineral vein containing gold, silver, copper, and lead in which there are traces of random working by Chinese and Koreans. The vein is interrupted with a number of faults and it is this disadvantage that has deterred capitalists from operating this mine in earnest. An arrangement recently has been reached between the Chinese owner of a lead mine about 33 miles above Tiehling on the River and a Japanese named Shinozaki to lease the mine, and development work will be started on the arrival of engineers.

Japan Buys Chinese Cash.—Up to the end of February, dating from May last year when the purchase of copper cash was started by Japanese in Shantung, the cash exported from Tsingtau to Japan amounted to 13,000 tons worth Y4,368,000. A certain firm in Shantung province has in stock thousands of tons and the total amount of the square holed coin gathered for exportation is nearly 20,000 tons.

Chinlingchen Iron Mine.—An appropriation of Y300,000 for operating the iron mine at Chinlingchen is to be defrayed out of Japan's Extraordinary Military List when the same is sanctioned by the Cabinet council. In such event the Shantung Railway intends to take in hand the working of the mine. There is said to be repairing work to be done before the mining is actually started, and it will be the end of this year or early next year before the first ore will be taken out of the pit.

According to Japanese experts' reports the ore in this mine has been over-estimated as to quality and quantity. The percentage of iron is said to be not over 60. The magnitude of the vein was estimated by the German geologists to be about 100,000,000 tons. This estimate is pronounced as rather exaggerated. It is considered safer to put the content of ore at about 50,000,000 tons.

Japan to Work Manchurian Mines.—Progress is being made between the government of China and the South Manchuria railway company over the plans for the working of the Anshanchan iron mines in Manchuria, reports the *Yorozu*, which says it is believed that the Chinese government eventually will grant to Japanese railways the right to work the mines. The work may be undertaken by a joint enterprise of Japanese and Chinese capital, but the *Yorozu* says that although nominally the capital of the company, which will be twenty million yen, is to be taken up by the Japanese company and Chinese capitalists, yet practically all will be Japanese money.

Disaster at Fushun Colliery.—A disastrous accident took place in Oyama Pit of Fushun Collieries on April 15, while 2,000 men were at work. Out of this number a Japanese foreman, of the name of Hamaji, and about 60 or 70 Chinese coolies are missing. The dead carried out by the medical corps numbered 16. Six men of the Medical Corps were injured more or less. The Pit yields 1,400 tons per day in ordinary circumstances, but the daily output will not average over 800 tons for the time being.

Japan to Mine in Yangtse Region.—As result of a visit to China by Mr. Kishichiro Okura, heir to Baron Okura, Messrs. Okura and Co. have decided to start mining works in the Yangtze Valley, according to the Japan Advertiser. The mines in question are about 30 miles southwest of Nanchang in Kiangsi province. The company has already obtained permission from the Chinese Government and the work will be carried on jointly with Chinese capitalists. The mines are expected to produce 350,000 tons a year.

Seoul Mining Company.—A report from Holkol, Korea, gives the following results obtained from the Seoul Mining Co.'s operations for the month of March.

	Yen.
Value Bullion Recovered ...	131,217.00
Value Concentrates recovered	150,916.00
Total Receipts (approx.)	Yen 282,133.00
Operating Expenses (approx.)	110,000.00
Operating Earnings (approx.)	172,133.00

The Kung Kol prospects are reported to be decidedly encouraging.

Oriental Consolidated Report.—During December the Oriental Consolidated company's output was \$144,472 from 26,621 tons. The three mills worked steadily as there was plenty of water, and there were few stoppages of Okura's power supply. The extraction obtained in the Taracol cyanide plant was 89%, while that for the Maibong tube-mill 105%, the latter due to a hang-over in the zinc-boxes, from the previous month, when the extraction was only 75.7%. It is hoped to be able to maintain a more even output from the Maibong tube-mill as soon as all details are arranged in routine order. The February output was \$116,800, a reduction due to lower grade and a short month.

Tin and Tungsten Find in Siam.—Two all-British Syndicates, the one domiciled in Singapore, the other in the Malay States, have been quietly and unostentatiously prospecting and taking up areas in Southern Siam and Siamese Malaya. In fact, says the Penang Gazette, one of the syndicates had concluded arrangements with a big London Company for the working of one of their areas believed to be of great value only a few days before the war broke out.

The managing director in Siam of both these British syndicates has continued prospecting and we now understand, that besides three valuable tin areas acquired in the Monthon of Nakon Sri Tammarat, he has quite recently found an extensive and rich wolfram deposit in a district never before, it is believed, visited by any European. This deposit, both lode and alluvial, extends over several square miles and has the rare advantage of an inexhaustible supply of water running through the centre of the property.

In Siamese Malaya he has discovered and acquired another rich alluvial and lode tin area. This has been named the Layston mine and may be the mine written about by John Smith 200 years ago, in his fables of Malaya.

U. S. Dredges in Malaysia.—Dredging operations in the Federated Malay States and Siam have for the past few years assumed considerable importance. Recovery of tin is the principal object sought. Practically all of the operators are English companies and chief among these is one known as Malayan Tin Dredging, Ltd., which has approximately 1,200 acres of tin-bearing lands in the Kinta Valley at Batu Gajah station, Perak. The property has been drilled throughout at close intervals and four special Lobnitz bucket dredges are now in operation, with another to

be put in service in the near future. It is estimated by the company that one of these machines will clean up 8 to 10 acres per year. A number of dredges of American build were constructed during the year for companies operating in the Peninsula. These include one 7 cu. ft. Bucyrus dredge with steel hull, for a company known as Tin Bentong, which will be installed at Kuala Lumpur, and one 5½ cu. ft. Bucyrus dredge, also with steel hull, for the Tin Mines of Siam, Ltd., a subsidiary of the East Asiatic Co. of London. This dredge will be used in the Pong district of Siam.

Burmese Tungsten Supply.—Efforts to increase the wolfram (tungsten) industry in Burma, are already bearing fruit in Tavoy, which is the centre of mining. Since December, Tavoy has become almost a metropolis. The present production tops 200 tons and the required quantity after March is 350 tons monthly. Over 8,000 Chinese and Indians are at work, with the object of augmenting the output. The important increase is reported of 484 tons in the annual output of wolfram, which makes the output 2,115 tons. It is hoped in official circles that the output for the present year will reach 4,000 tons.

Fire Clay of Fuchou.—Fuchou fire clay was quoted at about Y12 per ton for delivery in Japan last year and has competed with the Iwaki output quoted at Y15 per ton until the rise of freights and short tonnage which have thrown the export of this article to Japan out of the question. The consumption by the Ceramic Division of the S. M. R. Co., Central Laboratory, and the Railway Workshops at Shahokou combined, is measured at between 4,000 and 5,000 tons per annum and a larger market is to be sought in Japan. The most likely customer is the Government Steel Works, Edamitsu, whereto the bulk of last year's consignments was destined. The Fuchou output is of excellent quality. The clay belt covers about 9,000,000 *tsubo*. If the steamer freight should be brought down to a more workable level, exportation to Japan might be resumed with a promise of a fair profit.

U. S. Army Coal Award.—The contract for supplying the United States Army in the Philippines with 60,000 tons of coal, and for which bids were opened on March 1, has been awarded to the Kailan Mining administration with head offices at Tientsin, China. The contract calls for delivery at Chinwangtao, China, the army to furnish the transportation of this amount of coal, each ton to consist of 2,240 lbs. The prices submitted by the Kailan Mining administration for Kaiping bituminous coal are \$2.50 (U. S. Currency) per ton for lump coal and \$3.00 for washed nut coal. The contract provides that if any portion of the coal contracted should necessitate lightering, the contractor should receive \$0.50 for each ton thus lightered, provided that the amount does not exceed 15 per cent of the total amount. Other bidders in this award were Madrigal and Co., and the Mitsui Bussan Kaisha, whose lowest price for delivery of Japan coal in Manila was P13.75. (\$6.87 U. S. Currency) a ton. The army cement contract has been awarded to Wise and Company who bid on 45,000 barrels to be delivered at Chinwangtao, China, the army to furnish transportation, at the rate of \$1.625 per barrel.

Tayabas P. I. Coal Seams.—Coal deposits in the hills back of Lucena, Tayabas, are the attraction which has led local capitalists to plan the formation of a mining company with an initial capital of P500,000, which will number among its incorporators Mauro Prieto, Tomas and Manuel Earnshaw, Teodoro Kalaw, Jose Lim, Doroteo Trinidad, and Vicente Madrigal.

It is said that analysis of the coal obtained from the Tayabas deposits shows it to be of excellent quality, and the promoters hope to be able to place sufficient quantities upon the local market to materially decrease the importations from Japan and Australia. The annual importation of coal from foreign parts is more than half a million tons, on an average. Previous attempts to develop coal deposits in the Philippines have not proved particularly successful, but the men interested in the present project are of the opinion that transportation facilities available and the quality of the deposits are sufficient to insure the success of this new venture.

Philippines Drilling Wells.—The Philippine Bureau of Public Works has completed nine new artesian wells, as follows: Caloocan, Rizal, 412 feet, 20 gallons per minute; Quezon, Nueva Ecija, 374 feet, 25 gallons per minute; Los Banos, Laguna, 385 feet, 15 gallons per minute; Salasa, Pangasinan, 15 gallons per minute; Ligao, Albay, 315 feet, 15 gallons per minute; Ayuquitan, Oriental Negros, 135 feet, 30 gallons per minute; Aguilar, Pangasinan, 255 feet, 20 gallons per minute; Tanza, Cavite, 332 feet, 30 gallons per minute; Asingan, Pangasinan, 334 feet, 20 gallons per minute.

Malay States Tin Output.—Statement of block tin and tin ore exported, and approximate value (in Singapore currency) during the 3 months January, February, March, 1916, and comparison with corresponding period of previous year is as follows:

	Block Tin		Tin Ore (70 per cent. of gross weight)	
	1916 pkls.	1915 pkls.	1916 pkls.	1915 pkls.
Perak	7,178	9,205	110,003	105,541
Selangor	11,685	7,995	43,112	52,497
Negri Sembilan		9	4,049	5,584
Pahang	1,694	2,143	13,535	15,726
Total ...	20,558	19,354	170,702	170,348
Approximate Value				
	1916	1915		
Perak	\$10,349,774.30	\$8,810,609.58		
Selangor	4,832,707.54	4,643,201.92		
Negri Sembilan	355,210.22	423,783.56		
Pahang	1,346,136.45	1,383,330.58		
Total ...	\$16,883,828.51	\$15,260,925.64		

ELECTRICAL PROJECTS AND APPARATUS

Will Light Kungchuling.—The plan of forming an electric light company at Kungchuling, as presented to the South Manchuria Railway Co., has been approved of by the Railway Company. The new company's shares are to consist of 1,000 of Y50 each, of which number one-half is to be subscribed to by the Railway Company. According to a recent investigation the number of subscriptions to the lighting service is about 2,200 lamps, which figures are, however, expected to rise to about 2,500 lamps by the time the works are actually opened.

Installation at Liushutun.—Governmental permission for the establishment of an electric light plant at Liushutun is not yet granted but preparations are being pushed forward and orders for the necessary machinery, etc., have already been placed in Japan. Work is to be started as soon as permission is given. The service will be opened some time in June or July.

Russia Buys Telephones.—The Russian government recently placed with the Japanese manufacturers an order for telephone apparatus and wires to the value of about three million yen, according to Mr. Tanaka, director of the communications bureau. The Nippon Electric Company, the Oki Shokai, the Kyoritsu Electric Company and others with whom negotiations were concluded are to supply the order in one year's time. This is the first order from a foreign country to the Japanese manufacturers of telephone apparatus and wires.

Siam Electrical Co. Sales.—The sales of current in Siam for light and power during the last three years have been:

1913 Tcs. 1,052,879; 1914 Tcs. 1,081,813; and 1915 Tcs. 1,041,236. Rent of meters in 1915 Tcs. 5,749 higher than in 1914 and Tcs. 13,065 higher than 1913. The traffic receipts (passengers) on the Bangkok Electric line are lower than in 1914 but higher than in 1913. The Samsen line seems steadily improving on last year's figures which were Tcs. 13,978 better than in 1913. The profit on light and power was—1913 Tcs. 840,518; 1914 Tcs. 920,221; and 1915 Tcs. 959,716. The profit on the Bangkok line was—1913 Tcs. 295,938; 1914 Tcs. 313,779; 1915 Tcs. 316,322. The profit on the Samsen line was—1913 Tcs. 109,942; 1914 Tcs. 132,166; 1915 Tcs. 130,172.

BUILDINGS

New Peking Offices.—A new building will be erected for the Peking offices of the Audit Department on the site of the former building of the Ministry of Navy. The cost of construction is estimated at \$240,000.

British Legation Improvements.—The British Civil Service Estimates for the year ending March 31, 1917, have been issued, and include Provision for water supply, heating system, electric generating plant and ice-making plant, at Peking to cost £600. The total estimates for the Consular service in China (partly repayable from Indian revenues) are £76,263—last year's total being £73,678.

Philippine Plan Postponed.—Falling into the same pit with the proposed government sugar central in the town of Isabela, Occidental Negros, and the new post office building of the city of Manila, the new Manila custom house will have to be forgone for sometime to come on account of the tremendous rise in the price of building materials in the world's markets. The legislature has already set aside a total amount of P1,000,000 for the complete construction of the project, but with the present prices of construction materials, P500,000 more will be necessary. Some months ago, bids were advertised by the public works authorities for the construction of the foundation of the project and six local contractors offered bids, the lowest of whom was John Gordon. Due to the advice given by the secretary of commerce and police, all these bids have been rejected.

MANUFACTURES

China Tea Improvement.—Chow Tze-chi, when Minister of Agriculture, recently obtained funds for the inauguration of a department for the improvement of tea. The Ministry has therefore requested the Governors of Anhui and Fukien and other provinces producing tea to obtain the best experts and to send

them to Peking for service in the new department. According to a report issued by the Ministry the export of red, green and brick tea in January and February aggregated 260,000 piculs, 60 per cent of which was exported to America and 40 per cent to Russia.

China's Aeroplane Factory.—According to the Imperial News the Chinese Government will establish a factory for the manufacture of aeroplanes. The services of two American and two German engineers have been engaged for the factory, which is to be located in Honan.

Dairen Bean Mills.—The total outputs of the Dairen Bean Mill Union during February were 2,078,000 pieces, being a little over 59 per cent. of the maximum aggregate producing capacity. The figures for the leading plants were:—

	Pieces.		Pieces.
Nisshin.....	143,000	Chengyuchang...	61,000
Santai	110,000	Chuchenghsiang.	56,000
Kodera	92,000	Tungyungmao...	52,000
Lishengli	78,000	Fuyuan	53,000
Saito	74,000	Hsinshunhung. .	43,000
Fushuncheng.	65,000		

Manchurian Bean Oil for U. S.—Shipments of bean oil from Dairen to the United States were on a very small scale till the end of February when matters assumed a lively aspect. During the first decade of March, 52,868 piculs of bean oil were exported to America, and in the middle decade a direct consignment from Dairen amounted to 78,800 piculs. With the recent rise of silver, the price of bean oil stood on the 23rd inst. at S. Y11.90, as compared with S. Y10.03 on the corresponding date of last year. Such a broad difference in price ought to have dulled demands in America, but the cotton crops in the United States of last year totalled only 11,000,000 bales as against 16,000,000 bales of the previous year and this decrease had the effect of causing a rise in cottonseed oil, creating a demand for bean oil as a substitute.

Japan's Cotton Mill Outlook.—The end of the semi-annual business term for most of the cotton spinning mills comes at the end of May, and directors of various spinning mills are deliberating as to distribution of profits, but their concern is not due, says the Japan Advertiser, to their anxiety to distribute as large a percentage as possible but to their intention to pretend that the profits were not so enormous as is generally believed. It cannot be denied that the profit of the spinning industry was exceptionally big for the present term for the following reasons:—

The American cotton has been continually cheap, the price of cotton yarn has always been higher than the average price of foreign raw cotton, the internal trouble in China has had comparatively little effect upon the export of cotton yarn, the stoppage of British supply of thin yarn in China has called for a substitute supply from Japan and the export of thin yarn textiles for China has become prosperous.

The mills which have profited most are the Amagasaki, the Toyo Boseki and the Goto Boseki. Most of the other companies have of course secured a profit greater by 20 or 30 per cent. than in the previous term. The general impression among those interested is that the Amagasaki will probably pay 40 per cent., the Toyo Boseki 20 per cent. and the Goto Boseki 20 per cent.

Japan's Paper Mills Busy.—As a result of the war and a consequent limitation of supplies, the paper mills throughout Japan are either extending their plants or establishing pulp mills.

Some manufacturers have already completed the installation of their new equipments. The

production of paper is expected to make striking progress during the next few months, the extent to which the various mills will share in increased production being about as follows:

The Oji Paper Company has ordered from America a paper-making machine which can produce newspaper at the rate of 2,000,000 lbs. a month. It will be installed at Tomakomaki Mill in Hokkaido by the end of January next year. The Mitsu Bishi Paper Mill is to install two Swiss paper-making machines early in 1917, at the new factory in the suburbs of Tokyo. The machines can produce extra grade printing paper to the extent of 1,200,000 lbs. a month. The Fuji Paper Company will put two modern machines of Japanese make into operation at the Kanzaki Mill by the end of June to increase its monthly production by 700,000 lbs.

The Kyushu Paper Company has installed two Japanese made machines at its factories, to be in full operation by June and increase the company's production by 700,000 lbs. a month. A new American type machine has been ordered by the Kokura Paper Company from a Japanese machine factory to be in full working order by August, to make inferior grades of printing paper to the extent of 400,000 lbs. a month. The Kumano Paper Company has secured three new machines which will be in operation by the end of May when the company's capacity will be increased by 900,000 lbs. a month.

Eleven new machines added to the existing paper plants with a combined productive capacity of nearly 6,000,000 lbs., represents more than 15 per cent. of the entire production at the present moment. In addition a new mill is being established in Oita prefecture for the production of rice paper. In view of the good return from this special line the Toyo Paper Company is believed to have decided to establish a new plant with the same object.

Demand for Japanese Umbrellas.—The export of foreign style umbrellas made in Japan has for years been making progress, the recent average being 1,800,000 yen a year. The umbrella makers lack material, and are now unable to make as many umbrellas as demanded for export and for home use. The Toyo Shokufu (Weaving) Co. has bought a factory and plant in Kirin from the Nippon Seifu (Cloth Manufacturing) Co. for weaving cloth for umbrellas, with 150 looms in perfect working order and 2,000 yards of cloth are being turned out every day. It is expected that 400 looms will be in working order before the end of the year when 5,000 yards a day can be turned out.

New Manchurian Tannery.—After months of experiments Mr. Fujita, who was formerly in the employ of Messrs. Okura & Co., has leased a tract of land comprising 2,500 tsubo at the north of the present temporary tannery. On this site a new factory building is to be raised with an annual output of at least Y170,000. Water about Dairen is rather hard and this presents a difficulty.

Japanese Rock Candy.—The manufacture of rock candy in Hamamatsu has recently made remarkable progress and two factories, the Horiuchi Rock Candy Co. and the Nakamura Rock Candy Co. have ceased competition and opened a common sales department. The production last year was 1,700,000 *kin* (*kin*=1½ pounds) of which 1,000,000 *kin* was turned out by the Horiuchi Co. and 700,000 *kin* was by the Nakamura Co., the value of the product being 460,000 yen in all. Of this amount, 1,200,000 *kin* was disposed of for home consumption. About 500,000 *kin* was exported, of which 300,000 *kin* went to Shanghai and 100,000 *kin* each to Tientsin and Tsingtau.

Japanese Munitions Export.—Munitions of war already contracted for with the Japanese

Government to be supplied during this year amount in value to Y.110,000,000 approximately, of which Y.80,000,000 worth is to be supplied by the War Department, Y.10,000,000 by the Navy Department while Y15,500,000 is the price of the three men-of-war, captured by Japan in the Russo-Japanese War, to be restored to Russia. Exact figures for orders to private merchants and manufacturers are not available, but are estimated at about Y.130,000,000. It is therefore expected that the value of all war munitions to be supplied by Japan to the Allies during this year will aggregate Y.240,000,000.

FORESTS AND PLANTATIONS

Reforestation in Chekiang.—The celebration of Ching-ming or Feast of the Tombs was held with a new and significant feature at Hangchow this year, in the observation of arbor day. It was the first observance of this day in the province and the beginning of a conservation movement which will have great bearing on the industrial life of the Province.

Since Mr. D. Y. Lin's trip up river with the Civil Governor a year ago conservation work and conservation sentiment have been quietly developing. As a result of this trip the Governor gave orders that each local magistrate in the province should plant 150 mow of trees each year. During the past few weeks more than twenty thousand trees have been set out on the hills around West Lake and within the present year three million seedlings and trees are to be put out. A larger part of the trees being put out now are firs which will grow to usable size within twenty years. The same work is going on in other parts of the province though not on so large a scale. Mr. Chen Pao-chin is also directing the work of reforesting the hills, giving full time to the work without salary at present. As returns come in he is to get ten per cent of the income. It is hoped by the officials that this plan will be adopted generally throughout the Province.

Reforesting China's Sacred Mountain.—The important question of reforestation is at last receiving attention here at the famous mountain Taishan which has been bare for so many years. A new official, Mr. Shen, has arrived and has thrown himself heartily into the plans laid down by the Government for reforestation. A few days ago all of the schools in the city, led by the official, marched to the side of the mountain and there planted about a thousand trees, the official himself planting two. The boys of the Methodist High School observed Arbor Day by planting a hundred trees on their new campus outside of the West gate of the city.

A movement that means still more for the future of this mountain is the purchase of a large tract of land in the South Suburb that will be devoted to raising trees for planting on the mountain. Many thousands of seedlings will be started this year in the hope that the old mountain will be covered with trees before many years pass. Still another special effort is being made to improve the mountain by a certain group of men who have applied for the right to develop a tract of land back in the mountain. Formal consent has not been received but it is expected that the work of planting orchard and other trees will begin soon.

To Map Samar Forests.—Graduates of the forest school of the University of the Philippines will undertake a reconnaissance survey of forest resources of Samar island. This will be the first reconnaissance of the island of any consequence that has been undertaken as yet. Although it is known to the bureau of forestry that many valuable varieties of commercial timber are found in Samar, its extent and location has not been looked into to date.

It will be the work of the party to prepare a careful and as accurate as possible forest map of the island, showing the location of the stands of the different commercial timbers, their extent, the location of navigable rivers, the best sites for sawmills, and the general characteristics of the timber regions.

Coffee in Mindanao.—Governor Gilsheuser is giving considerable attention to the revival and extension of coffee culture in the Lanao lake region. During the past 18 months he has induced one Amai Kurat to set out about 50,000 coffee trees on his place at Saguiaran. The site selected for the plantation is a sheltered valley about three kilometers back from the Overton-Keithley road. The location is considered to be ideal for coffee. As part of the campaign to extend coffee culture in Lanao, the schools have undertaken to propagate 500,000 plants in the school nurseries for general distribution. The majority of the plants will be grown at the Lumbata Agricultural School.

CHEMICALS & DYESTUFFS

Yokohama's Chemical Output.—According to an investigation made by the Yokohama municipal office, the total amount of chemicals produced in Yokohama last year was 58,864,391 pounds, valued at 435,313 yen. Of sulphuric acid there were 58,333,333 pounds, caustic soda, 484,800 pounds; alum, 47,000 pounds and ammonium sulphate, 9,258 pounds. Compared with the figures of the previous year there was an increase of 145,313 yen in value.

Sulphuric Acid for Russia.—The demand for various drugs for war use is brisk, and has caused a remarkable rise in prices. Sulphuric acid is in strongest demand, and to fill a big order placed recently, practically all the big factories in Japan have combined. The price is now 25 per cent higher than at the end of February, or about 25 yen per case.

Mr. Fujii, acting Consul General for Japan in Harbin, reports to the Foreign Office here to the effect that complaints have been heard that along with the increase of the import of Japanese drugs there, a great proportion has been found to be bad in quality. The latest instance is a certain amount of sulphuric acid from Japan and a part of it congealed. As this has happened more than once, the Novosri Dies published an article warning the people that many Japanese drugs were poor and Russian merchants have suffered considerable losses because of the defective quality of these drugs. Stocks have been confiscated and destroyed.

Japan's Glut of Dyes.—The enormous rise in the price of dyestuffs has caused dye-making concerns to be started in various places of this country. The making of vegetable dyes, for some time neglected, has been recommenced. Already the making of chemical dyes in black and brown, mainly from carbolic acid, has been started though on a small scale in many provinces. In Fuchu, in the province of Bingo, seven or eight dye makers have started shops in one street. The industry has gradually assumed a general character with a tendency toward over-production. These country dye makers insisted at first on 450 yen per 100 *kin*, but this has now been lowered to 300 yen. Calculated on the basis of the present price of the imported carbolic acid, 300 yen per 100 *kin* does not give any profit to the makers, showing that the production is excessive. The makers are said to be in financial difficulties. It is a misconception that a dye famine is probable.

Phosphorus in Japan.—The manufacture of red phosphorus, started immediately after the outbreak of war in view of the scarcity of the goods in the market and the consequent rise in the price, has already reached a high state of development with three big manufacturing, the foremost of which is the Nippon Electric Chemical Industry Company, of Tokyo, the next largest being the Fuji Electric Chemical Industry Company in Shizuoka prefecture. There is also the Electric Chemical Industry Works at Takata, Niigata prefecture, using 2,500 tons of phosphate as raw material annually. A new company has been promoted at Sakai, Osaka prefecture, by the Umebachi Iron Works whose new works will begin operations next month, having bought 50 tons of phosphate as raw material from the Mitsui Bussan Kaisha.

India's Indigo Crop.—A final forecast of the area under indigo in British India, based on reports received from the provinces, gives a total for 1915-16 of 314,000 acres, or 112 per cent. in excess of the finally revised area of 148,400 acres of last year. The total yield of dye is 39,900 cwt., as against 25,200 cwt., the revised estimate for 1914-15, or an increase of 58 per cent.

The average outturn per acre, however, works out at 14 lb., as against 19 lb. in the preceding year. The increase in area is due to the high price of indigo on account of the war. The season has not, on the whole, been favourable for the crop, except in Madras, where the crop is generally reported to have done well.

COMPANIES

Japanese Companies.—According to the provisions of the Commercial Code now in force, in Japan, trade-companies are of four descriptions; namely, partnerships, limited partnerships, joint-stock companies, and joint-stock limited partnerships.

Under the old legislation trade-companies had no means of attaching security to the debentures they proposed to issue; and consequently they experienced no little inconvenience in raising the necessary funds for the conduct of their business. To remedy this defect, the Law of Trusts for Secured Debentures was, simultaneously with the Railway, Factory, and Mining Mortgage Laws, promulgated in March, 1905; and the Tramway Mortgage Law was promulgated in April, 1909. In virtue of these laws, a company may on the one hand mortgage its property and issue debentures thereon, while on the other, official recognition is given to the establishment of trust companies whose object is to engage in trust business connected with secured debentures. The total amount paid-up of the share-capital or contributions in money of a trust company must be not less than a million yen; and its business is under the control of the competent authorities. In the event of a company proposing to issue debentures secured on things, such issue must take place according to the contract concluded under a trust-deed with a trust company; and a company which proposes to invite subscription in a foreign country for its debentures secured on things, may, with the permission of the competent authorities, conclude a contract with a foreign company.

The security on things to be attached to debentures is limited to the following:—

- (1) Pledge of movable property;
- (2) Pledge of a claim under a written instrument;
- (3) Mortgage on immovable property;
- (4) Mortgage on vessels;
- (5) Mortgage on railways;
- (6) Mortgage on factories;

- (7) Mortgage on mining;
- (8) Mortgage on tramways;
- (9) Mortgage on canals.

A company which proposes to invite subscription for its debentures may under a trust-contract authorise a trustee company to make such invitation; and the trustee company may itself take up, or cause a third party to take up, the entire amount of the debentures. The security on things under a trust-contract belongs to the trustee company for the benefit of the entire debenture rights specified in the trust-deed; and the same company is under obligation to reserve and exercise the security right for the benefit of all the debenture-holders.

TRADE AND COMMERCE

Japan's New Trade Record.—The foreign trade of Japan for the first three months this year set a new record in the history of the country. Exports amounted to 217,400,000 yen, while the imports were 175,152,000 yen, making a total of 392,552,000 yen. The figures for the corresponding months during the past five years are as follows:

	Exports	Imports	Total
	Yen	Yen	Yen
1912 ...	106,074,000	165,702,000	271,777,000
1913 ...	138,432,000	190,474,000	328,907,000
1914 ...	154,257,000	198,973,000	353,230,000
1915 ...	140,683,000	127,237,000	267,921,000
1916 ...	817,400,000	175,152,000	392,552,000

The exports up to April 10 showed an increase of 54,000,000 yen, compared with the same period last year. Of this increase 34,000,000 yen was shared by 7 kinds of goods only, and of these again raw silk alone showed an increase of 23,000,000 yen. Other increases were in wool cloth and leather goods for war purposes, copper, cotton goods, matches and lumber. Imports increased 33,000,000 yen of which some 20,000,000 yen was shared by raw cotton, wool, oil cake and iron materials, the cotton being responsible for 17,000,000 yen.

Addressing the conference of the Chambers of Commerce session on April 14, and using the above figures as his text Count Okuma said:

"The European war has incidentally given Japan a unique opportunity for economic progress. In only a year and eight months Japan's wealth has been increased by 2,000,000,000 yen. Thanks to the low prices of general commodities and to Japan's specially favorable geographical position, her foreign trade this year, it is estimated, will have a favorable balance of about 250,000,000 yen, while it was 170,000,000 yen last year. The exports, it is estimated, will reach 1,000,000,000 yen. Even the lowest estimate is over 800,000,000 yen. The imports will not exceed 700,000,000 yen. Besides the trade balance, Japan will get also 100,000,000 yen in freight this year.

"It is regrettable that in this time of national economic expansion Japanese manufacturers have resorted to the indiscreet production of inferior goods. The bulk of Indian trade has now trebled since the war began and the future prospects are very promising. But complaints are heard that Japanese goods are not fit for use. Thus the Japanese are about to lose the market once opened. In this respect, the Tokyo goods are generally free from such complaints, both in the quality of the goods and in the way of packing. The Nagoya goods are also not much complained of. But the worst examples are the Osaka goods. As Osaka is an important center of Japan's manufacturing industry, those concerned in business there should bear this in mind and try to prevent this evil."

Big Drop in Japan's China Trade.—Japan's China trade has received a serious setback, resulting in a fall in the value of exports and imports by millions of yen. According to the Japanese press this obviously is accounted for by the reaction following the record expansion witnessed during the closing days of March. According to official returns published by the Finance Ministry the exports to China during the opening days of April are valued at 4,631,608 yen, against 6,239,795 yen for the preceding ten days, while imports from that country are valued at 2,536,639 yen, against 3,677,473 yen for the preceding ten days. The exports to China during the opening 10 days of April were distributed as follows:

Manchuria, 413,781; North China, 1,870,887; Central China, 2,329,714; South China, 17,226. Imports from China during the same 10 days were: From Manchuria, 163,760; North China, 717,693; Central China, 1,252,176; South China, 402,410.

Nippon Porcelain Extending Plant.—The Nippon Porcelain Company, of Nagoya, which is under the management of Mr. Magobei Okura and family, has planned an extension which when completed is expected to result in increased annual production to the value of 500,000 yen. The company has had 14 kilns of the intermediate sizes in use, with a force of 3,000 employees. It is therefore proposed that three large kilns be installed, at once to be followed later by seven others, thus doubling the plant in actual operation.

Japan's Sugar Production.—The latest, and probably the most accurate estimate, places the total result of Japanese sugar milling this season at 4,900,000 sacks. This is an increase of 200,000 sacks over the estimates on which the new sugar disposition agreement now in force is based. If another and what is usually regarded as a reliable report be given credence, the excess will reach the high figure of 400,000 sacks. The problem now to be solved by sugar men is the disposition of this surplus which must be sold in overseas markets. The market now presents a livelier aspect, buyers being willing to take all the centrifugal offered at 17-55 yen per picul.

Chefoo Tussah Filatures.—With the return of the Chinese working hands from their old Chinese New Year festivities at their homes, all the tussah filatures at Chefoo have resumed operation. This is unusual for never in recent years did all the filatures, now numbering 42, resume work without exception immediately after the holidays. Demands for pongee silk from Europe and America have increased by leaps and bounds, and each filature is buzzing away on full time with a long series of orders to fill. Wild cocoons are quoted at 1.5 taels per 1,000 grains, and in some cases as high as 1.8 taels, as against only ½ tael in 1914. Pongee silk yarn has come up gradually since last Summer from 250 taels to 330 taels. Still the net margin of gain for the manufacturers is said to be exceedingly narrow because of the abnormal rise of the cocoons. Exports for last year reached the record amount of 18,159 piculs worth Hk. Tl. 4,359,000, compared with 8,344 piculs worth Hk. Tl. 2,044,000 for 1914. Not only pongee silk yarn but fabric has been more brisk. As against 6-7,000 piculs exported in an average year, the total increased last year to 20,000 piculs valued at Hk. Tl. 7,000,000, an amount greater than the sum total of both silk yarn and silk fabric for an ordinary year put together.

China Materials for Japan.—Japan's trade with China is becoming very prosperous. One feature is that the imports from China are growing rapidly, says the Japan Advertiser. There were imports valued at 18,217,000 yen this year up to March 20 from China, including Manchuria. The figures showed an in-

crease of 7,947,000 yen compared with those in the corresponding period last year. The cause of this prosperity is that since certain raw materials from European countries have been scarce owing to the war, Japan has relied upon China for substitutes. Japan has recently made remarkable progress in chemical and other manufacturing industries, and has wanted more raw materials. The list of the imports from China shows that these are mostly raw materials or half-made goods which Japan has to finish. Following is the list of principal items of import from China:

	Jan.-Feb. 1916	Jan.-Feb. 1915
Cow and buffalo hides ...	Y837,475	Y411,863
Raw and ginned cotton ...	2,335,806	1,369,173
Hemp & ramie ...	540,202	244,479
Mineral ores ...	536,670	22,945
Zinc ...	378,086	28,831
Quicksilver ...	123,315	—
Brass and bronze ...	1,145,361	—
Antimony and sulphide of antimony ...	1,190,817	—

China Beef for Philippines.—Proposals for the 6,000,000 pounds of frozen beef for the use of the United States army in the Philippines showed William Katz of Shanghai was the lowest bidder. This is the first time that he has entered the local field. Mr. Katz' bid was \$0.095 per pound, f.o.b., steamer, in China, or \$0.125 per pound, c.i.f., Manila, United States currency. The Queensland Meat company's bid was \$0.1325 per pound c.i.f., Manila; Swift and company bid \$0.1148 per pound, f.o.b., New York, and the Western Meat company bid \$0.1195, f.o.b., San Francisco. In view of the increase of nearly 100 per cent in the price of coal, bids for which were opened recently, the authorities anticipated a decided increase in the price of beef, and are naturally gratified at receiving proposals at a price even less than that now being paid. Some idea of the advance in freight rates is given by the difference in the price quoted on board vessel in China and the price asked for meat delivered in Manila, the difference on the six million pounds amounting to P360,000.

Indian Cotton for Japanese Mills.—Arrangements have been made for the provision of ships to deliver in Japan 1,370,000 bales of cotton from India in 1916, as against 1,230,000 bales in 1915. The present arrangements provide for the carriage of 600,000 bales by the Nippon Yusen Kaisha in ten ships, 450,000 bales by the Osaka Shosen Kaisha in six ships, 80,000 bales by the Peninsular and Oriental Co. in monthly or bi-monthly steamers, and 240,000 bales in chartered ships at the rate of two per month for six months.

PETROLEUM

Japan's Gusher Slowing.—It is reported that the Nippon Oil Company's famous gusher in Kurokawa, Akita Prefecture, having gradually decreased its output, and the prospects of other wells there being far from what is desirable, the company now attaches more importance to the new wells in Hokkaido than to the Kurokawa wells. Upon the discovery of the Kurokawa gusher, the company had entered into a contract for the supply of crude oil for a given amount for three years with the T. K. K. and also with the Furukawa Mines. But as the output in Kurokawa has decreased, the company, bound by the standing contract, has had to supply the oil from Northern Echigo province. Such being the case, the company is now unable to use the crude oil for refining and unless there is a substantial increase in the production from Hokkaido, the supply of home oil tends to decrease. The supply of foreign oil also

continues to decrease. The imports in recent years were:—

	Gallons
1913 ...	47,000,000
1914 ...	34,000,000
1915 ...	33,000,000

In January this year, the import was only 2,580,000 gallons, the lowest monthly record.

Australia's Oil Strike.—Discovery of the first gas and petroleum field on the Continent of Australia has been made near Grafton, on the Clarence River, in the extreme north-eastern part of New South Wales.

The oil and gas supply nearest Australia was that discovered in recent years in New Guinea. Australia annually has bought more than \$10,000,000 worth of gasoline, benzol, lubricating oils, and other petroleum products from the United States.

Metal Markets in 1915

The 12 months of 1915 have made up the greatest year that has ever been for the mineral industry, says the Mining Journal of London. Not only will the world's output in some of the most important departments of metal and ore production be the largest ever known, but the profits in many cases are on a scale which may be said without fear of exaggeration to surpass the dreams of avarice. Such statements may seem in this country hyperbole, but their truth will be quickly realised when the figures appearing elsewhere in this issue for the American outputs are studied, and it is exceedingly necessary that all interested in the mineral industry should realise this, more especially our traders, where the parrot-cry is invariably repeated: "There is no business to be done until after the war."

It is computed by the United States Geological Survey that in the principal metals alone there was an increase over 1914 of \$250,000,000. Copper showed an improvement of \$83,000,000, more than the total value of the whole production of 1914. Spelter showed an increase in value of over \$100,000,000, compared with a total value in 1914 of \$36,000,000. Increases like these can hardly be realised, so enormous are they, and they ensure immense prosperity and development to these branches of metalliferous mining for a long time to come. Compared with copper and spelter, the improvement of lead, which with an aggregate of \$53,000,000 showed an improvement of 22 per cent, seems almost puny, though in ordinary years such an advance would be very remarkable. In the precious metals improvements were shown, though naturally not of a spectacular character.

It is estimated that the gold output increased by 350,000 ozs., giving a total for the year of, approximately, 4,842,000 fine ozs. Silver, in contradiction to what has been published in this country, showed an increase of quite 4,000,000 ozs., giving a total of, roughly, 72,000,000 ozs. The iron and steel revival came too late to permit a record output, yet here values represent an increase of over \$27,000,000 on the 1914 figures, and the total ore production is inferior only to 1910 and 1913. The fuel industry does not show much change as regards output, which, with an increase of some 4½ million short tons, shows a gain of about only 1 per cent., but the late development of the trade boom accounts for this condition even more than it does for that of iron and steel.

The coal by-product industry, however, was taken up on a great scale, and a number of large plants were erected for the recovery of benzol and allied products. Consequently there will be considerable values to be allowed for this new industry, to say nothing of its importance in supplying the necessary raw

material for the manufacture of dyes and high explosives. The chemical industry generally has, no doubt, received a great impulse, as may be seen by reference to the sulphuric acid trade, where the output of the higher class product was more than doubled.

The production of petroleum added another record year to the long succession of increases which the American industry has recorded. The total output is estimated at 291,400,000 barrels, compared with 265,762,535 barrels in the previous year. There is a considerable branch of lesser products, the development of which has been stimulated by scarcity due to the war. Thus the output of quicksilver increased by 25 per cent, but more than doubled in value. The output, 20,681 flasks, was the largest since 1912, but the value, \$1,768,225, the highest in the last forty years. The average San Francisco quotation was \$85.50, against \$49.05 in the previous year. There has been marked development in the output of antimony, though the figures for the year are not yet available.

The tin output from Seward Peninsula, in Alaska, which was about 200 tons, was the best known. Returns for the rare metal ores are as yet unavailable, but there can be little doubt that they will show a considerable increase. As the "metals" were the earliest to experience the rise in prices, it follows that the Western States have the best showing for the year. Individually, the following States showed prominently: Montana showed an increase of 81 per cent. over the figures of 1914, and the figures (\$87,000,000) are, of course, a record. Arizona increased the value of her metal output by over 50 per cent., with a total of \$88,551,000. The improvement was mainly due to copper, but there was a large advance in zinc, and a considerable one in lead. Next came Utah with a total value of \$55,000,000, an increase of about 50 per cent. on the previous year.

Complete figures for California are not yet to hand, but there is an increase in gold and silver, and a larger one in copper, zinc, and probably petroleum. Colorado is estimated to have yielded \$43,100,000, an increase of nearly \$10,000,000 on the year. Idaho with \$37,780,000 showed an increase of 53 per cent. on the previous year's figures. This, again, was due to increases in copper, lead, and zinc. Nevada with a total of \$34,566,000 showed an increase of close on 18 per cent. in value. The output of Alaska is valued at \$32,000,000, by far the highest ever recorded. This is chiefly due to the great output of copper, which amounted to 83,850,000 lbs., against 21,450,628 lbs. in 1914. New Mexico improved her returns by about 60 per cent. with a total of \$18,277,000, compared with \$11,050,000 in 1914.

These results for the leading States of the West showed how widely the wave of prosperity has spread in the mining industry. Owing to the strong position of so many of the great concerns which handle and sell mineral products in the States, there has been no hesitation or inability to take hold of the opportunity which has presented itself. What has been done in the zinc industry is simply revolutionary, and while to-day in Great Britain the output of spelter is perhaps less than it was before the war, when it approximated to 60,000 tons, the United States capacity has been practically doubled, with a potential output of 650,000 tons in the coming year.

It is very easy to say the United States has had all the cards, but there has been no hesitation in playing them to score as quickly as possible, while over here there is general disposition to "wait and see," and while there is a lot of talk about what is being arranged and will be done in the future, objectively there is little, if any, progress to be recorded, except perhaps in the very diminutive department of the rare metals. Let our traders honestly face what America has done, and then say if they are satisfied with the leading which is being given to the mineral industry under the British flag.